SD TIMES SOFTWARE DEVELOPMENT MANAGE SOFTWARE DEVELOPMENT

The Impact of Agile
Putting a Slant on Tools

page 5

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Does .NET With LINQ Beat Java?

BY DAVID WORTHINGTON

There is a question some developers are asking: Has LINQ given Microsoft's latest .NET Framework an edge over Java? Sources say "yes," but with some caveats.

Microsoft shipped Language Integrated Query as part of the .NET Framework 3.5 in November. LINQ was originally one of many research projects that the company has under way. LINQ integrates query concepts directly into .NET programming languages using a syntax that is similar to SQL, to simplify the querying of data, objects and XML.

Patrick Hynds, president of security consultancy CriticalSites, said that LINQ is "an object-oriented revolution for data," because it, like object-oriented programming, allows programmers to write code that is more like the way people think.

Before LINQ, he explained, developers had to adapt to a particular programming language's precepts of the way data was organized and accessed. "One of the key things that I found about Java is that it has been very comfortable to make the developer conform to what 'they' [Sun and The Java Communi-

continued on page 32 ▶

Oracle Gets BEA for \$8.5B

BY DAVID RUBINSTEIN

Middleware is a key for software companies looking to get into large enterprise accounts. Now, Oracle—which finally reached an

agreement to acquire BEA Systems—holds another key.

In the deal announced in mid-January, Oracle will pay US\$8.5 billion, or

\$19.375 in cash per outstanding BEA share. BEA's \$1.3 billion cash on hand brings the price of deal down to \$7.2 billion. This comes a few months after Oracle's initial offer of \$6.7 billion was rebuffed by BEA as being inadequate.

In October, Oracle offered

\$17 per share for BEA, which has experienced persistent revenue shortfalls from software sales. But BEA left that offer on the table, despite the offer being

about 25 percent above BEA's one-year stock price average of \$13.62 per share. At that time, BEA was looking for \$21 per share, which Oracle

called "impossibly high."

SD Times reported in its Nov. 15, 2007, issue that Oracle had decided to abandon the takeover proposal, but apparently the company maintained its interest. Oracle was bolstered by financier Carl Icahn, BEA's largest single shareholder,

who was prodding BEA to accept a deal. An hour after the stock market opened on Jan. 16, the day of the announced takeover, BEA's stock was up more than 19 percent, to \$18.58 per share, while Oracle's stock price was off less than 1 percent to \$21.23 per share.

Analyst Rob Enderle said BEA was attractive to Oracle more for its customer base than any particular technology that BEA possesses. "Oracle has acquired customers in most of their acquisitions," he said. "If you can get in at a strategic position, and BEA middleware is strategic, then you can sell around it and lock out other vendors.

"They could've easily contin-

ued to edge into BEA's markets, but it would take a lot longer," he continued. "This is the easier path."

Enderle noted that acquisitions are a fast track for increasing the size of a company's customer base so long as the acquiring company does not abuse those customers. "I think the CA lesson of the '90s has been learned by Oracle," he said. "You can't go in as a raider and milk the customers and expect them to be anything but angrily disloyal." He pointed out that in many acquisitions, the buyers "say 'We'll take care of you,' but they mean it more in the Mafia sense than in the

continued on page 33 ▶

W3C Takes SPARQL To a Higher Level

New protocol for queries

BY P.J. CONNOLLY

The Semantic Web might be coming a little bit closer to reality, if the publication of a major new specification is any indicator.

The World Wide Web Consortium announced Jan. 15 that it has published SPARQL, a Resource Description Framework-based query language designed to accelerate W3C director Tim Berners-Lee's vision of the Semantic Web... a Web, that is, which contains context as well as content.

The aim of SPARQL is to let users express high-level goals for

their data queries and allow those queries to be easily extended to unanticipated data sources and applications. Running on top of HTTP or SOAP, it provides a Web service for anything that asks a question.

The SPARQL—pronounced "sparkle"—specification defines both the SPARQL protocol and the query language; the acronym is recursive, standing for "SPARQL Protocol And RDF Query Language."

The other core technologies continued on page 25 ▶



CHANGING OF THE GUARD IN REDMOND

BY DAVID WORTHINGTON AND JEFF FEINMAN

Many of Microsoft's first generation of managers are beginning to walk off into the sunset, leaving behind a new breed of leaders who could take the company in a decidedly different direction.

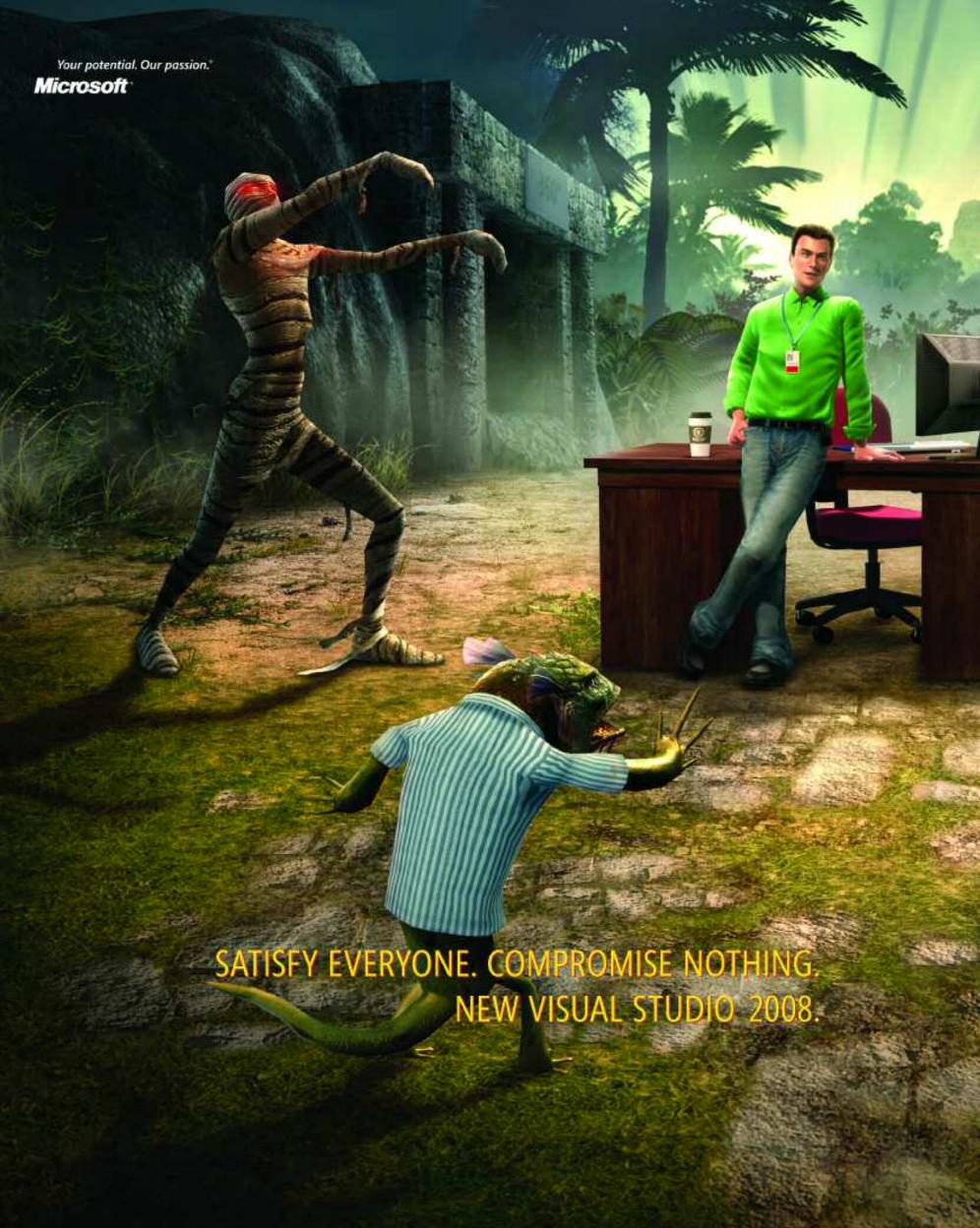
In early January, four prominent Microsoft executives announced that they would be leaving the company, the most notable being Jeff Raikes, president of the Microsoft Business Division.

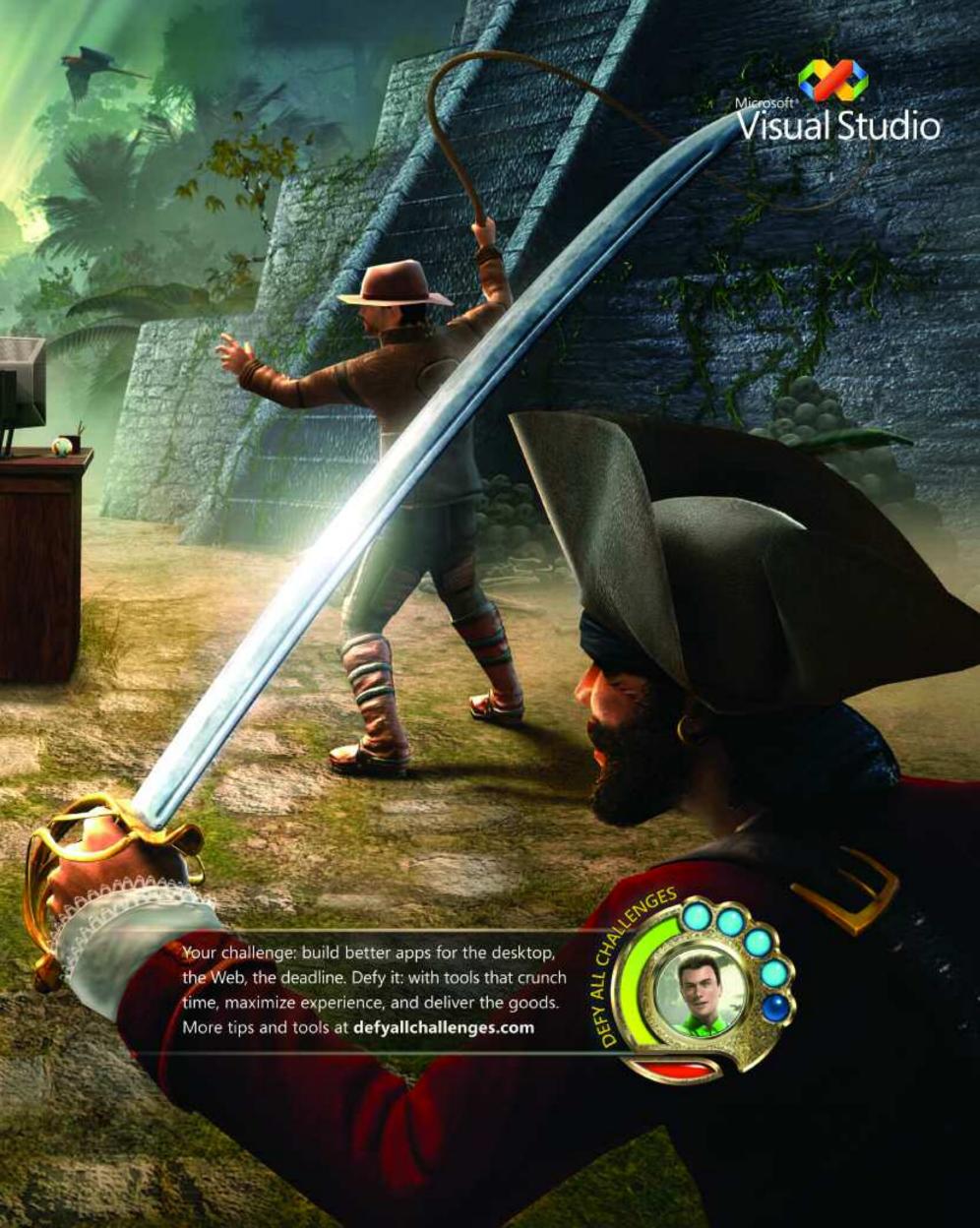
Raikes, 49, said on Jan. 11 continued on page 30 ▶

Gallery Pays Homage to ANSI Artwork

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It's All About The Internet in 2008

Experts offer their predictions

BY ALEX HANDY

It's never easy to look into the future, but it certainly can be fun. We asked some of the smartest developers and analysts we know to look into their crystal balls and give us their best glimpses of what 2008 will be all about. And, surprisingly, a lot of them agree: 2008 will be dominated by the Internet and by those who access it via their mobile devices.

Dr. Tony Wasserman, executive director of the Center for Open Source Investigation and professor of software engineering practice at Carnegie Mellon University, sees 2008 as a year of mobile Web development. With over a billion handsets around the world, the mobile phone is an obvious paradigm shifter, and Wasserman points out that newer phones bring the Web into the hands of many users.

"Mobile devices will have a big impact on the development of Web applications. Developers will have to revise existing Webbased applications to accommodate the different screen sizes, resolutions, and input methods used for these mobile devices. It's a big challenge to test these applications, given the combinatorial explosion caused by the multitude of devices, creating a business opportunity for those who can create effective testing and test management tools for the mobile Web," writes Wasserman in his 2008 predictions.

"By the end of the decade, we'll see a sizable transition toward the use of mobile browsers accompanied by a multitude of new Web applications that take advantage of the capabilities of mobile devices," concluded Wasserman.

OPEN SOURCE, OPEN SORES

Another analyst who covers the open-source world is Raven Zachary, research director for open source at The 451 Group. Zachary expects 2008 to be the year the open-source business model comes together. But that doesn't necessarily mean the world will be all roses and peaches for open-source companies.

"The new wave of opensource startups that began in 2004 will start to see a shakeout as some business models fail." wrote Zachary. "A number of these startups will be running out of Series A and B (and [for] a few, C) funding soon, and I expect to see some open-source startup failures in 2008. Watch for low multiple acquisitions, too, as admissions of failure."

Zachary also expects opensource contributions from vendors and enterprises to increase in the coming year, and beyond. "We're just at the beginning of activity by established IT vendors with open source. Over the past few years, much of the attention has been focused on open-source startups. 2008 will bring much more activity by the existing IT vendor community, especially the larger IT vendors. You're going to see a lot of code that was once proprietary move into the open-source arena," wrote Zachary.

Carey Schwaber, senior analyst at Forrester Research, identified five trends for 2008 that will affect software developers. Unfortunately, her predictions may spell out trouble for time-crunched teams.

First, Schwaber expects that "the diversification of the software supply chain will require continued on page 28 ▶

Tool Maker Marketing Pitches Toward Agile

Shift from role-based, waterfall approach



BY JENNIFER DEJONG

Caught up in the surge of interest in agile processes, tool makers have quietly changed the way they market their offerings. Instead of focusing on rolebased development, with dedicated tools for architects, coders and testers, they are tipping their hats to ideas at the heart of agile development.

Some marketing messages directly reflect agile practices, emphasizing activities such as testing code early and often, or defining application requirements throughout the development process, instead of specifying all of them up front. Other efforts simply reflect broader agile thinking, using phrases such as "better business alignment," "reduced time to market" and "improved visibility into project status" in their marketing literature. "The traditional application life-cycle tool vendors have had to adjust their messaging to align with agile principles," said Bob Schatz, owner of the consultancy Agile Infusion. "For many of them, there are really no application changes. But unrealized promises of the past have tarnished [earlier] value propositions."

The new marketing efforts reflect the shift away from waterfall development, where one stage finishes before the next starts, and "developers wrote code and threw it over to the wall to QA," noted Empirix CTO and director of strategy Dan Koloski. The tools, which did not share data among the different project phases, reflected that reality, he said. But today agile practices and ideas, such as test early and often, and link testing with development, have gained wide acceptance, and tools are increasingly focused on tying together the two processes, he said. "I credit the philosophy and spirit behind agile with making that happen."

Empirix sells testing and performance management tools.

NODDING TO AGILE

Even though tool makers aren't necessarily targeting only agile shops, some offerings allow teams to implement agile practices, such as capturing requirements incrementally, claimed Compuware Optimal Trace product manager Fergal Mc-Govern. "Agile says: 'We are not sure we can get requirements right at the outset,' so let's build in the ability to change." He offered an example. "Let's say the requirement you're working on is 'create an invoice.'" The



Tool makers are trying testing to agile practices, says Empirix's Koloski.

team may not realize until later in the project cycle just how many different scenarios the application has to contend with in order to fulfill that requirement, he said. "What if the user enters his name, address and credit card number incorrectly?" Agile development enables teams to deal with such issues, he said. What's more, agile looks at steps in the development process in terms of how they relate to other steps, not as discrete tasks. That thinking is evident in tools that show, for example, which requirements have been tested, added McGovern.

Compuware sells tools for managing changes, code, requirements and testing.

Another nod to agile development is the availability of process templates designed to enforce continued on page 31 ▶

OPEN SOURCE AND AGILE?

Open source and agile development are terms often uttered in the same breath. But there is not necessarily any affinity between the two, said Forrester analyst Carey Schwaber. Many agile teams use open-source tools, she noted, but they do so not because the offerings are open source, but because they are lightweight. Unlike suites that cover many facets of ALM, lightweight tools are designed to perform a single task whether it's writing code or testing for code coverage, she said. "But a tool can be lightweight, without being open source." And by the same token, not all open-source offerings are lightweight.

Another reason that open-source tools are seen as going hand-in-hand with agile development is that in by-the-book agile projects, tools play only a supporting role. Teams nail down other aspects of the project first, and then go out and find tools to aid the effort. Many agile teams gravitate toward open-source tools, because they are free and can be downloaded and put to use auickly.

There's one big way in which open-source development and agile development are radically different, said Dave Gynn, director of enterprise tools and frameworks for consultancy Optaros. Agile team members work together. But open source is all about individual developers working alone, then making contributions to the project. he said. "No one is doing open-source development at the whiteboard."

—Jennifer deJona

Creator Reflects on 20 Years of Tcl

Tool Command Language reaches milestone, prepares for future

BY ALEX HANDY

When John Ousterhout was on sabbatical from the University of California, Berkeley in the

epiphany. During his many years as a programmer and professor of computer science at

fall of 1987, he had an Berkeley, he'd found himself writing numerous commandline languages for his programs. Whether building an integrated

circuit editor or a text editor, Ousterhout felt as though he was constantly creating substandard, implementation-spe-

cific command languages for these applications.

His epiphany: write one unified command language that could be extended to fit into any application, regardless of its purpose. And so in January of 1988, Ousterhout set out to create what would become the Tool Command Language, now more commonly known as Tcl and often pronounced "tickle."

"What happened was, I built it [as a command language], then I realized what I'd really got here was the core of a language that you could extend with functions," said Ousterhout. This extensibility would help to make Tcl an extremely important language for a new graphical user interface that was just coming to prominence.

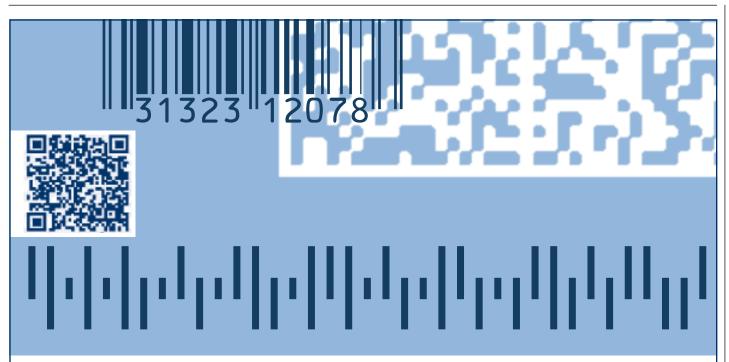
"The X [Window] system had just come out," said Ousterhout. "The tools for programming it, like Motif, were extremely difficult to program. I came up with an interface called Tk. That resulted in this system where it was really easy to build user interfaces. People started using Tcl in a very different way than I expected. People took Tcl and Tk together and wrapped them in a primitive application. Then they'd generate these huge Tcl scripts to produce graphical applications."

From those beginnings, Tcl expanded and improved with the help of Ousterhout and collaborators from around the world. Eventually, the language would be used in everything from NASA's Mars Rover to a billion-dollar offshore oildrilling platform.

But Tel isn't without its missed opportunities. The biggest of these, said Ousterhout, were related to the Internet.

"In 1991 or so, there was a message that appeared on the Tel newsgroup from a guy saying he heard about this cool thing called the World Wide Web," said Ousterhout, laying out a familiar scenario for many developers at the time. "He thought it was really cool, but there were no graphical tools for it. He asked if anyone was

continued on page 19 ▶



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Electronic Frontier Foundation Busts Bad Patents

BY ALEX HANDY

The Electronic Frontier Foundation has its own Ten Most Wanted. But unlike the FBI's, this is a list of 10 bogus patents that the not-for-profit advocacy group hopes to have removed or re-examined by the U.S. Patent and Trademark Office. As 2008 begins, the firm has six targets left on its list of socalled patent abusers and four of the top 10 are under review.

Of those four patents, the most recent was one held by Test.com. Patent number 6,513,042 is described as "a method for administering tests, lessons, assessments, and surveys on the Internet, scoring them, and maintaining records of test scores online." It was approved for re-examination by the USPTO in 2006, and all 16 of Test.com's claims were rejected last month. Test.com's response had not been filed with the USPTO by press time.

IN PUBLIC INTEREST

Using this patent, Test.com was roaming the United States bringing suit against colleges that offered online test taking. Emily Berger, a patent attorney on leave from a Cambridge, Mass., law firm to work with the EFF, said that the Test.com case was right in line with the EFF's criteria for a "bad" patent.

"In the Test.com case, they were going after universities. While I'm not saying universities can't always afford to defend themselves, there are situations where it's in the public interest to protect universities," said Berger.

Other patents currently being re-examined at the EFF's behest include Ideaflood's patent on creating personalized subdomains and Neomedia Technologies' identifier/directory lookup patent. The EFF already succeeded in having a patent revoked that was held by Clear Channel and Live Nation, which codified a method of broadcasting concerts live on the Internet.

There's still work to be done, however. Next up for the EFF's scrutiny are patents related to VOIP, streaming media and natural language processing. Said Berger, "These were ones primarily where the patent owners had been looking to go after somebody who was a small business owner or an individual

to afford representation."

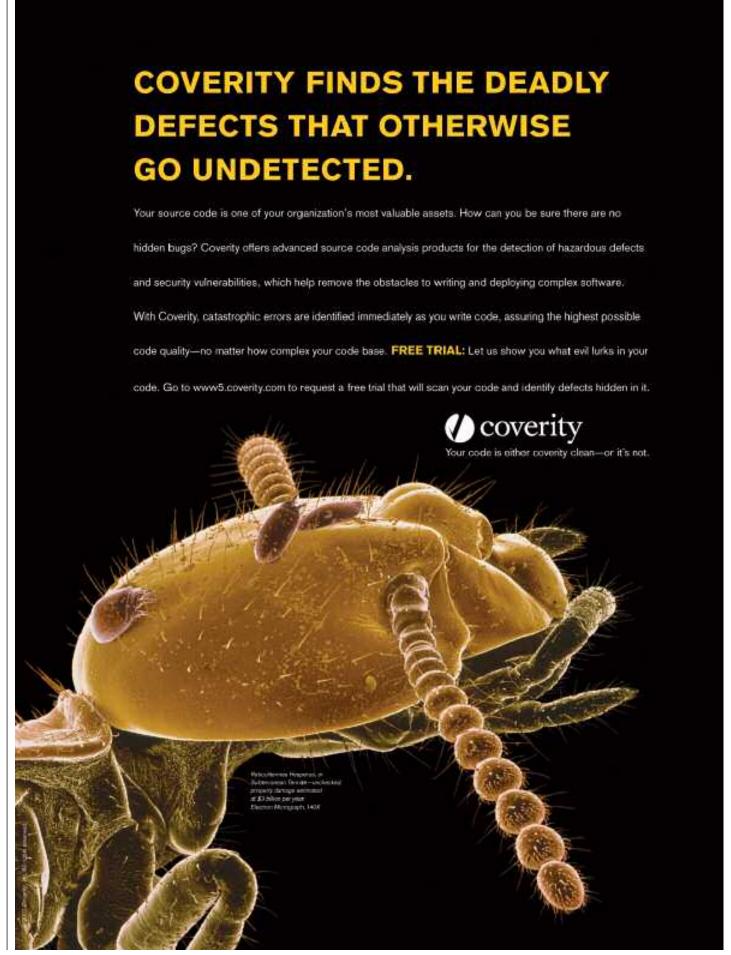
That's where the EFF's status as a well-funded not-for-profit comes into play. The organization was originally founded in

who would not have been able 1990 by Mitch Kapor, John Gilmore and John Perry Barlow. Since that time, the EFF has defended and prosecuted cases ranging from vulnerability disclosure to federal law enforcement

raids of suspected hacker cliques.

So while there are still thousands of questionable patents out there—such as U.S. Patent 5,960,411, Amazon's one-click shopping patent, and U.S.

Patent 4,873,662, which seems to patent the hyperlink—the EFF is concentrating its efforts and currency on patents that are currently being used to torment the less financially able.



IBM Opens Jazz; Team Concert Set

IBM has opened its Jazz collaboration platform to the software development community with Jazz.net, and is also making progress on the first Jazz-based

commercial product.

Previously only available to IBM customers, Jazz.net can now be used by all software developers. Scott Hebner, vice president of marketing and

strategy for IBM Rational, said that anyone can get access to all that it had been for the most part invitation only, with thousands of developers in the IBM community participating. But the company has announced

Jazz technologies, source code, bug reports and requirements. Hebner said that IBM is trying to build Jazz in an open and transparent manner so that cus-

tomers can participate in the creation of products they'll ultimately be using.

Additionally, IBM is offering free licenses to any university or educational institution that wishes to teach with Jazz, as well as to any qualified open source project.

PREPARING CONCERT

IBM has also released the beta 2 version of IBM Rational Team Concert Express, which will help small and mid-sized development teams improve their productivity by enabling real-time collaboration with a global scope.

IBM Rational Team Concert Express, which will be fully available in the middle of this year, is the first Jazz-infused offering in a new suite of development servers being created, IBM officials said. It includes Web dashboards to help software project teams to see real-time data such as the status of work items and project health.

Team Concert Express is a development server designed to allow IBM customers to better integrate the products that they create into their application life-cycle management platform, Hebner said. It is going to be a low footprint, flexible ALM platform that's optimized for agile development teams. "What we mean by that is it integrates the entire team around an integration server and allows you to do in-place collaboration with team members," Hebner said. "It's one thing to be able to collaborate with each other; it's another thing for the system to figure out what you're working on, and what other assets or people are related to that work effort."

IBM Research has also announced Project Bluegrass, which takes the IBM Jazz technology and combines it with virtual worlds. The main goal of the project is to help the Baby Boomer generation communicate its knowledge to the younger workforce before it's too late.

"Bluegrass is merging the power of these virtual worlds, like Second Life, with an open, community-based platform like Jazz," Hebner said. "What's kind of neat about it is that as you're working as part of a software development team, the whole idea of Jazz is to facilitate that collaboration. The virtual world adds the ability to start to visualize that, and see what the other people are doing and what they're working on."



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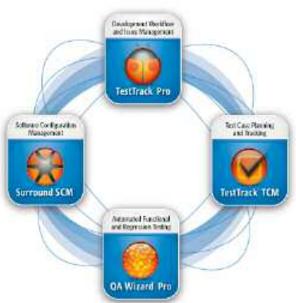


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NEWS BRIEFS

COMPANIES

The **Microsoft IT-Ignite** program will be helping independent software vendors in the Philippines market their products abroad. Microsoft has teamed with the Cebu Software Development Industry Association to assist developers in the global market. The Microsoft IT-Ignite program is a company effort to promote the Philippines as a business outsourcing location for markets like the United States and the United Kingdom.

NEW PRODUCTS

WS₂

Open-source SOA provider WSO2 has debuted the WSO2 Web Services Framework for Ruby 1.0, which provides an open-source framework for con-

suming Web services in the Ruby programming language. WSF/Ruby 1.0 enables developers to consume Web services with either the WS-* stack or REST, and features both client and service APIs . . . IBM has made available the Retail Integration Framework, a SOA-based solution based on open-source standards that will enable retailers to integrate business processes across the IT organization. The framework extends IBM's Store Integration Framework, a SOA implementation that includes 75 business partners and 50 retailers deploying the technology in 25,000 store locations . . . Synygy, a software-as-a-service company, has introduced Synygy On-Demand Development Services to aid in outsourced, staff-augmented software product development. Synyay officials said the company provides the global facilities and staff for the creation of Web-native software product development solutions, and has a testing team that provides checks of critical applications . . . Infrastructure software provider WANdisco released two new products that create available and scalable versions of Subversion and CVS. The products, Subversion Clustering and CVS Clustering, combine the two version control systems with WANdisco's replication technology. Each server in the cluster has its own independent database that is kept in sync with all of the others, company officials said ... Moka5 is offering a preview of its namesake virtualization tools for Mac OS X. Moka5's LivePC virtual machines can also be used with VMWare Fusion, and the company's

....

release is scheduled for early 2008.

LivePC library provides a variety of canned LivePC

UPDATES

images, including FreeBSD, SUSE and Ubuntu Linux systems. A beta

Green Hills Software has announced that its integrated development environment, MULTI, is available for Microchip's 16-bit PIC24 microcontroller. The Green Hills tool for Microchip's PIC24 microcontroller offers engineers a MPLAB C30 C compiler, a MPLAB REAL ICE emulator for debugging, and the MULTI integrated development environment ... The Apache Software Foundation has released Apache Wicket 1.3, an open-source component-based framework. The purpose of Apache Wicket 1.3, according to Apache officials, is to make Web development easier for Java developers, as developers can create components with Java and HTML. The new version of Wicket, formerly a framework of SourceForge, also has AJAX support . . . ZHMICRO, a provider of enterprise software development tools, has released Z++ Visual O7 with integrated database development tools. Z++ Visual O7 offers an IDE with capabilities catering to applications built in C++, and this version can work with MySQL. When used with the Z47 processor, applications written with Z++ Visual O7 are capable of running on Windows, Linux and Palm . . . Radiance Technologies announced the release of TrueDelivery 4.5, the company's asset delivery system. TrueDelivery is designed to allow teams to collaborate on large mission- and time-critical images, videos, and other enterprise files and data. The new release offers a browser-based UI, sender plug-ins for Adobe Creative Suite and Apple Final Cut Pro, and a SOA adapter for BEA WebLogic 10 . . . Xceedium released GateKeeper 4.0, a hardened appliance that is designed to help and validate the security policy compliance of technical users working with critical infrastructure. GateKeeper monitors and enforces at the network socket level and blocks unauthorized connections between AIX, Linux, Solaris and Windows systems, Keystroke logs and session records are maintained in a central repository.





GALLERY GOES GA-GA OVER ANSI ARTWORK

BY ALEX HANDY

Before the Internet was easily accessible, computer users would communicate through bulletin board systems. To differentiate one BBS from another, many systems would welcome users with art rendered in ANSI graphics, which used "extended ASCII," a character set containing boxdrawing and block characters that could be rendered in a limited range of colors, and intended for rendering graphics on text terminals.

ANSI art was wildly popular in the BBS world, and rival gangs of artists battled each other to make the most complex, artistic or offensive images they could. On Jan. 12, Christopher Abad, programmer and owner of the San Francisco art gallery 20 Goto 10, held an opening to showcase the artwork of ANSI art creators. What makes the art so impressive is the fact that ANSI art creation tools were generally keyboard-based, a far cry from the easy-to-use graphic arts programs we have today. For more information on the show, see twentygoto10.com.





VGA monitor.



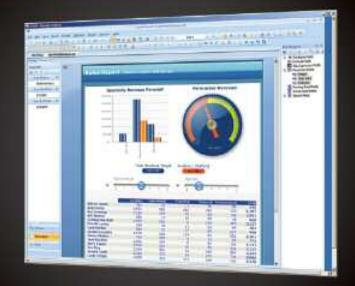
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The Middleware Manifesto

Are developers getting what they need for SOA?

BY DAVID WORTHINGTON

ZapThink analyst Jason Bloomberg has something to nail to the proverbial church door, but instead of the Papacy, he is calling out what he views as a disturbing trend across the IT industry. In Bloomberg's words, leading platform vendors are selling "the same old middleware," with some new features shoehorned into a vision being dubbed "Dynamic Business Applications."

Dynamic Business Applications are applications that follow the development principles of service-oriented architecture (SOA) harnessed together with attendant technologies such as business intelligence, process management and rules.

Bloomberg explained that the vendors, having sunk untold millions of dollars into the development of application servers and similar middleware, are faced with pitching them as solutions to problems that didn't exist when the products were designed. The great problem facing the Web during the mid-1990s, he noted, was scalability and transactionality, not how to address the technical challenges of supporting loosely coupled services.

Sandy Carter, IBM vice president of SOA and WebSphere strategy, channels and marketing, argued that application servers as part of a larger middleware portfolio are central to adopting SOA. "The application server is a critical part of the SOA in its ability to support and facilitate the five entry points to SOA which are people, process, information, connectivity and reuse," she said.

It should be noted that Bloomberg did not single out IBM in his remarks and acknowledged that some vendors were "worse than others," without getting into specifics.

WHAT IS OLD IS NEW AGAIN

In lieu of throwing it all out, claims Bloomberg, companies are making middleware seem suitable for the new demands of the marketplace, and SOA is an excuse to make maturing software more appealing and to have something new to sell, he said. The set of technical challenges facing customers attempting to

support loose coupling include governance and the integration of business process capabilities and services.

Bloomberg believes that this trend has created a disconnect between what customers are looking for and what vendors

are delivering. "The typical pattern is for a vendor to provide a Web services integration solution, and call it SOA. However, no product gives you SOA, and Web services integration is only somewhat related to SOA," he explained.

By contrast, he noted, a firm with a clean slate would be more likely to develop a "set of distributed service intermediaries that provide all of the elements of ŜOA infrastructure." ■



'Spring' Time for .NET Programming

BY DAVID WORTHINGTON

.NET developers can now take a sojourn into the world of Java programming with the Spring Framework, which was recently ported to .NET, extending the its programming model to Planet Microsoft.

SpringSource released version 1.1 of Spring.NET on Dec. 20. It translates core concepts

claimed productivity benefits of of the Spring Framework to .NET including aspect-oriented programming (AOP) and dependency injection, with optimizations for ADO.NET and ASP.NET. The framework

is an open-source system for assembling components via configuration files.

AOP is designed to complement object-oriented programming by centralizing common

behavior that cuts across inheritance hierarchies and provides declarative transaction management. The defining idea is to have implementations look much like requirements, explained Mark Pollack, principal consultant and lead of the Spring.NET project.

"Its [AOP] ability to apply functionality across the board at a high level gives it a lot of power," said Pollack.

Dependency injection support for controls, pages, modules and providers, in addition to NUnit integration with test cases, is available through Spring.NET's features. Pollack explained that dependency injection makes testing applications easier than hard coding dependencies to a test system.

Dependency injection is a form of inversion of control done at the configuration file level instead of the code level, so programmers do not have to change their code when versions of classes change.

SPRINGING TO .NET

Other facilities were incorporated into the framework specifically for .NET. Pollack said that the framework makes programming for ADO.NET easier by behaving like a helper class, eliminating redundant boilerplate code and allowing developers to program at a higher level than stock .NET. The ADO.NET framework adds additional data access features, including Data Access Object support classes, while integrating with Spring's declarative transaction management functionality.

Spring.NET also provides "Master Page" support for ASP.NET 1.1 applications, and externalized page flow based on result mapping inside of ASP.NET applications. The first is a feature of ASP.NET 2.0 that delivers a consistent layout template across a Web site. Pollack noted that those are the key functionality points that would make Spring attractive to .NET developers.

Features may be used on an à la carte basis. For instance, a developer could pick between its ADO.NET data access framework or dependency injection.

"The benefit of Spring.NET as compared to other competitors in the .NET space is that it has a design proven in the Java world; it is well thought out and inherits the legacy of success on Java," Pollack added. ■

Real Solutions for Real Challenges



Precision.Bl, a provider of business and clinical intelligence solutions for health care providers, had decided to move its COM-based analytical software to .NET and a Web-based version. In order to deliver the same look and feel in the product with which its customers have grown comfortable, Precision.Bl needed to create a consistent look and feel across all its applications.

Precision.BI ("PBI") adopted Infragistics NetAdvantage for .NET to deliver data analysis software to its healthcare provider audience. PBI used the NetAdvantage AppStylist to design one consistent look and feel, and then branded all of their .NET and Web-based applications' fonts, colors and styles instantly. Sharing the user experience allowed doctors and healthcare professionals to access the system remotely through the Web just as if they were sitting in an office at the hospital,

Bringing together such a cross-platform, highly-functional UI was facilitated with NetAdvantage's comprehensive tool set. It cut development time to extend PBI's data analysis products with its grids, tabs, trees, toolbars, and an Office 2007 ribbon. The ribbon element alone saved hundreds of man-hours that would otherwise have been prohibitive. Building their presentation layer on Infragistics NetAdvantage, PBI was able to continue delivering powerful benefits to their many customers.

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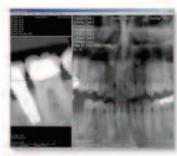
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FishEye is able to work with Crucible to give programmers a view of their course code repository and offer peer code review.

Atlassian: Code Review, Search Forged in Crucible

BY JEFF FEINMAN

San Francisco-based bug tracking and project management specialist Atlassian has increased the compatibility within its tools with the release of FishEye 1.4 and Crucible 1.2

Atlassian officials said that both products work closely together, with FishEye enabling programmers to search and analyze their source code repository, and Crucible providing peer code review. FishEye allows code reviewers looking at code on the Web to access all source code in a single environment.

"What we're doing with Crucible and FishEye is [to] try to bring a Webcentric, collaborative, asynchronous way to handle code reviews, to make it a lot more efficient and palatable to developers," said John Nolen, director of developer relations. "This way, you no longer have the process of having everyone printing out the code and have a three-hour meeting where you scrutinize it line by line. That just ended up being far too inefficient and burdensome."

A FACE IN THE CROWD

The most important features in Fish-Eye 1.4 and Crucible 1.2, released in mid-December, are at the integration level, according to Nolen. Atlassian has made it easier for users of FishEye to work with Atlassian Crowd, the company's single sign-on and identity management tool. Crowd was developed so that people with large user bases running FishEye, Crucible and other Atlassian tools can share user profiles

and have access to allied systems.

"We've enhanced the way that you can define users and groups inside the application to better match the rest of your applications," Nolen said. "One of the main reasons we developed Crowd was because we were dissatisfied with the complexity of many of the other single sign-on tools out there. Crowd is our shot to address the problem of how to deal with security across a large team of developers that may be geographically distributed. It puts the control for users and groups in the hands of a single administrator across all these products."

Another new feature of the double release is a stronger integration between FishEye and Crucible, with links popping up in the interface to make it easy to jump back and forth between the two views of a particular code, Nolen said. There is also a plugin for Atlassian's JIRA bug tracking and project management tool, allowing users to attach a view of all the code changes and code reviews that are relevant to an issue in JIRA.

Atlassian is also planning a product called JIRA Studio, a hosted version of all of the company's products. JIRA Studio, due out later this year, is the first time Atlassian is selling an integrated package of all its tools. It adds revision control, a repository viewer, a wiki, and code review in the same tool. Atlassian was supposed to start testing a beta version of the studio in early January. Developers can view the capabilities of JIRA Studioand take a tour f the product at www.jira.com.

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SOA Survey Indicates Success

Enterprises are integrating legacy applications, according to findings

BY DAVID WORTHINGTON

Survey says: most organizations are implementing SOA to solve integration issues across heterogeneous environments, and they have been successful in adopting it within their enterprise. AmberPoint, a company that produces governance solutions for service-oriented architectures (SOA), surveyed 330 IT professionals from a convenience sample, one without statistical significance, of its customers and contacts; about half

were AmberPoint customers. The respondents included software architects, development managers and directors of operations.

The survey found that a majority, or 58 percent, of SOA systems contain components that are not designed to be interoperable as Web services. These include components that use non-SOAP messaging, such as IBM WebSphere MQ and Java's Remote Method Invocation. Further, mainframe applications show up in 47 percent of SOA applications, and packaged applications accounted for 68 percent of components.

"The journey toward a SOA environment is just that, a journey over time," remarked Ed Horst, AmberPoint's vice president of product strategy. "The vast majority of new components are not SOA- [or] SOAP-enabled components, but companies are usually adding a new piece that is SOAP-enabled."

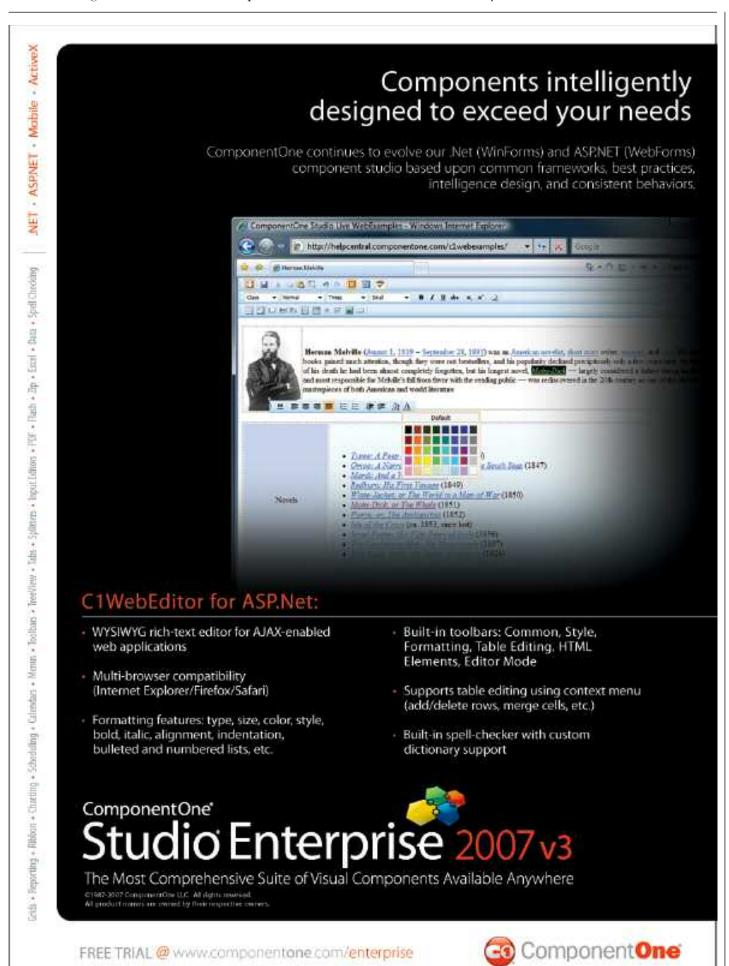
According to the findings, SOA-based systems span organizations and relatively few were standalone, single-department systems. Of SOA production systems, 53 percent serve multiple departments and 26 percent are deployed externally to customers and partners.

SOA FOR INTEGRATION

Despite its promise of reusable, loosely coupled services, SOA is most commonly adopted to address integration issues. A majority of respondents identified inflexibility and "stovepipe," or ad hoc architectures, as the primary problems that SOA addresses. Results for this item were consistent among customers and non-customers.

"Re-use isn't the predominant benefit customers are looking at," said Horst. He added that a handful of SOA environments (6 percent) incorporated more than 250 different components.

Perhaps most intriguing was the result indicating that more than 90 percent of respondents characterized their SOA projects as being a full or partial success. Only 1.5 percent met with failure. \blacksquare



Tcl Gets a Makeover for 20th Birthday Present

willing to work with him to make a graphical front end for the World Wide Web. If we'd done that we would have been out there before Mosaic. Unfortunately, I looked at it like it was the craziest thing I'd ever seen in my life. I thought it was not going anywhere."

Even if Tcl had become the language behind the Web, life wouldn't have been a bed of roses for the language, surmised Ousterhout. When it came time to port the language to Windows and the "classic" Mac OS, Ousterhout found that making a writeonce, run-anywhere language isn't exactly easy.

Tel "started in the Unix world, so making a system where you could truly have programs run unchanged on Windows, Mac and Unix was very difficult. The other challenge was as people built larger Tcl programs, speed became an issue. Tel [is] interpreted, not compiled. The Tcl language is so dynamic and flexible. That gives it power but makes it hard to execute dynamically," said Ousterhout of the language's biggest hurdles.

As for the name of his language, Ousterhout said that he likes the pronunciation "tickle." "I sort of liked the sound of it. I've always liked names that are kind of upbeat or cute. You may have noticed the logo for Tcl is a feather. That's a pun, because also a feather is used as a quill.'

Ousterhout hasn't worked



Tcl creator Ousterhout admits that the language is powerful, but its execution presents obstacles.

years now, having handed over the reins to Jeff Hobbs, director of languages at ActiveState.

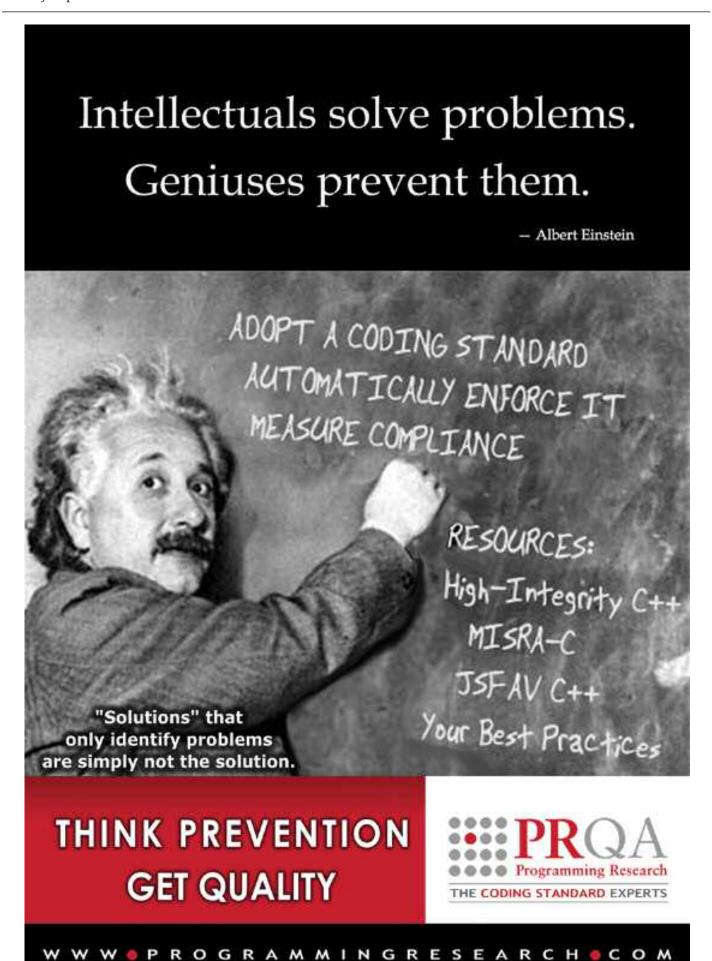
Hobbs will spend 2008 preparing and releasing the first major update to Tcl in four

and have a reduced memory footprint, he said. It will also add arbitrary precision integers and a new clock command that will not be subject to the dreaded Unix 2038 issue.

are facing a problem similar to the Y2K bug, in that at 3:14:08AM (GMT) on Jan. 19, 2038, the system clocks will roll over to 12:00:00 AM Jan. 1, 1970.

Thanks to the new clock

expect the language to live on long after he's gone. Said Hobbs, "I think you can use the [new] clock command until somewhere near the end







_INFRASTRUCTURE LOG

_DAY 62: We don't have the tools to leverage open standards like Eclipse™ and Linux. We have zero support. We need to do something but don't know where to start.

_Gil formed a support group for the developers. Who knew he could play the guitar and harmonica at the same time?

_DAY 64: This strikes a chord. IBM Community Edition products along with tools and support from Rational. They're based on open standards and give us what we need for business-critical apps. And IBM software and systems support a wide range of development styles, programming languages and deployment environments. Now we can design and code the way we want.

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22 | NLW | Software Development Times | February 1, 2008 |

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Vi Labs Polishes Armor

Anti-tampering, driver verification bolster security tool

BY JEFF FEINMAN

Security tool provider Vi Laboratories has added anti-tampering enhancements to its latest release of CodeArmor for Windows and Microsoft .NET.

CodeArmor 2.2, expected to be released—fittingly—on Jan. 22, provides a number of security enhancements designed to extend the tool's ability to automatically protect a wide range of software applications, without having to modify their source code.

One of the main new features in CodeArmor 2.2 is an enhancement to prevent protected application files from being tampered with statically or dynamically. Vi Labs officials say that binary tampering is the leading method used by the piracy and cracking communities to bypass and disable

application license enforcement systems. Also new is device driver verification, which allows CodeArmor agents to check device drivers for safe



is the leading method used by New features in CodeArmor 2.2 allow application providers to apply the piracy and cracking com- anti-tampering abilities to Windows and .NET applications.

execution of the application.

This feature, explained Victor DeMarines, vice president of products at Vi Labs, "came from a set of customers that run their software on embedded systems. One of our customers runs their e-voting software on an embedded system, and another runs an X-ray technology used for homeland defense. These vendors want to strengthen the security to ensure that their software can only run on the machine that they certified."

More layers of anti-debugging settings have been added to guard against kernel- or user-level debugger tools. CodeArmor also offers in this release integration capabilities with Sybase PowerBuilder and Borland Delphi.

"In the PowerBuilder environment, there are specific feature sets that make it more difficult for a software protection solution to be automated," DeMarines said. "One of

the value propositions of our product is that you don't require a software developer to run this, and it can be automated by a build engineer."

Testing Moves Beyond QA

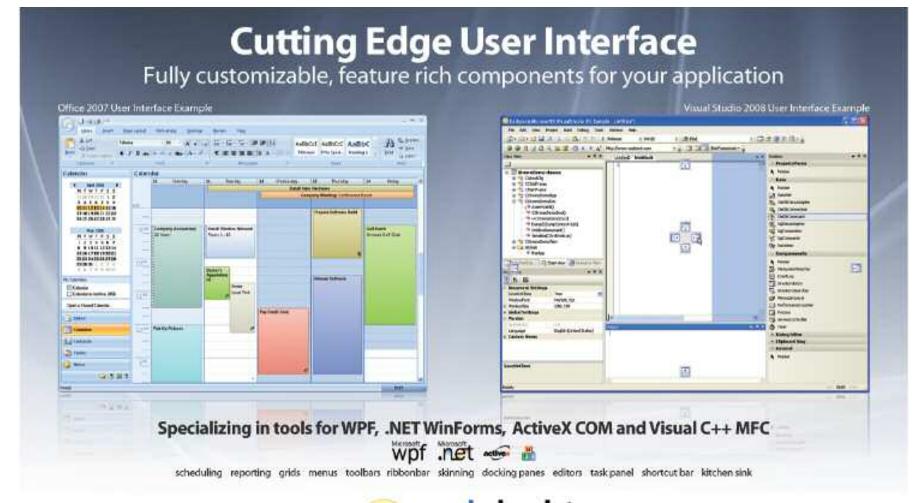
BY DAVID WORTHINGTON

There is often a debate between developers and QA on the one hand, and IT operations teams on the other, over best practices, with the first group complaining that IT does not adhere to the classic application development life-cycle process. StackSafe thinks it can improve infrastructure staging and testing by making it more like software development.

On Jan. 28 StackSafe launched Test Center, a virtualized staging and testing solution for IT operations teams to test changes against. The premise is that test teams will better understand the impact of changes before committing them to production environments.

Test Center supports typical testing activities such as application assembly and validation, compliance reporting, diagnostics and root cause analysis, emergency change testing, performance tuning, production changes, patch testing, risk assessment and regression testing.

Dennis Powell, senior product manager of StackSafe, said that it extends testing intelligence into IT operations, and allows IT teams to "speak the same language" as developers, by helping them understand the approaches and issues associated with software development.







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mValent Works Toward Global Integrity

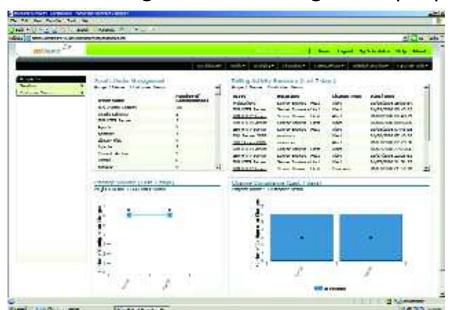
New version of configuration management tool brings multiple provisioning features

Automated application configuration management tool provider mValent has added the ability to simultaneously propagate sets of configuration data to multiple servers to the latest version of its configuration management tool.

Integrity 5.0, released on Jan. 21, brings enhanced support for large-scale, globally distributed applications. It can provision application configuration settings to a virtually unlimited number of target host systems, claim company officials. This can be done for any single element in the application infrastructure, including application servers, Web servers or databases.

"If you have a large production environment or a large preproduction environment, and you're trying to make sure that everything is synchronized, you have the ability to propagate those corrections and new versions of the configuration properties simultaneously out to all environments," said Jim Hickey, chief marketing officer for mValent.

There is also a "Compare" capability in mValent Integrity 5.0 that can give change detection and analysis on either



Reports from the mValent Integrity 5.0 Infrastructure Change Dashboard can be generated automatically and distributed through e-mail to IT managers.

pre-determined schedules or an ad hoc basis. This automated feature can track configuration differences across time through whole environments.

Updated change reporting capabilities in the tool allow reports to be generated automatically and distributed via email to IT managers.

"What managers want to know on a reporting basis is how much change is happening in the environment, where are the root causes and sources of change, and how much change is in compliance with their defined process,"

Hickey said. "Not only do we give them that sort of data, but now we can do that on a regularly scheduled basis. It's a great feature to help the more senior management understand the level of change in their environment."

Another new feature in mValent Integrity 5.0 is a Java API that can integrate the tool with other IT service management applications, including BMC's Remedy Service Management or HP's Universal CMDB.

According to mValent officials, Integrity targets infrastructure and application support teams that deliver a complex application life cycle and synchronize multiple environments. It is also aimed at teams that uphold the integrity of an application infrastructure for IT audit and compliance needs, and teams that mitigate application performance or stability problems.

Hickey said that a major goal for mValent in 2008 is continuing its growth, the company having doubled in size over the past few years. The company is also coming off its best two-quarter stretch ever, though he would not share exact earnings, as mValent is privately held. ■

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Time-lapse View lets developers see every edit ever made to a file in a dynamic, annotated display. At long last, developers can quickly find answers to questions such as: 'Who wrote this code, and when?' and 'What content got changed, and why?'

Time-lapse View features a graphical timeline that visually recreates the evolution of a file, change by change, in one fluid display. Color gradations mark the aging of file contents, and the display's timeline can be configured to show changes by revision number, date, or changeset number.

Time-lapse View is just one of the many productivity tools that come with the Perforce SCM System.



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W3C Gives Web a SPARQL

of the Semantic Web work with SPARQL; as defined by the W3C, these include RDF for data representation and RDF Schema, the OWL Web ontology language for constructing vocabularies, and GRDDL (Gleaning Resource Descriptions from Dialects of Languages) for automatically extracting Semantic Web data from documents. SPARQL relies upon many Web services standards, including WSDL.

"Trying to use the Semantic Web without SPARQL is like trying to use a relational database without SQL," wrote Berners-Lee in a prepared statement, adding "SPARQL makes it possible to query information from databases and other diverse sources in the wild, across the Web."

SPARQL is meant to provide users with the ability to create write-once, run-many queries. Traditionally, high-level queries

Application View Is Focus Of ASG-becubic

BY JEFF FEINMAN

ASG Software, provider of business service management tools, released ASG-becubic version 7, adding new metrics.

Bob Humes, director of product management for ASG, described ASG-becubic as a metadata product that understands all the artifacts that make up an application. It can provide views of applications for different teams of an organization by using two sets of rules engines.

According to company officials, the new version, released in early January, enables IT management to define rules to represent multiple views of applications and relate artifacts to one or more applications. The new version includes the McCabe and Halstead metrics, which respectively measure the complexity of control flow and language.

An additional functionality has been added to version 7, which can designate queries as a Web service, which Humes said allows anyone in an organization to call that query and receive back XML or CSV data.

have required specific formulations that vary between applications and database views. This is fine when one is performing a single lookup, but falls apart quickly in today's interconnected world. As one queries multiple sources, the return is multiple data sets, for which logic has to be written in order to merge the results. In short, SPARQL's an attempt to solve an expensive and laborious problem.

There are 14 implementa-

tions of SPARQL known to exist, in both closed and open source.

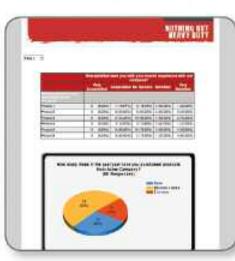
The W3C RDF Data Access Working Group actually released three recommendations as part of the publication of SPARQL; along with those for the query language and protocol is a recommendation for an XML-based results format.

"SPARQL's focus on querying the data models saves time for developers," removing the need to create a separate service to retrieve each aspect of a system's state, noted Lee Feigenbaum, chair of the working group. ■

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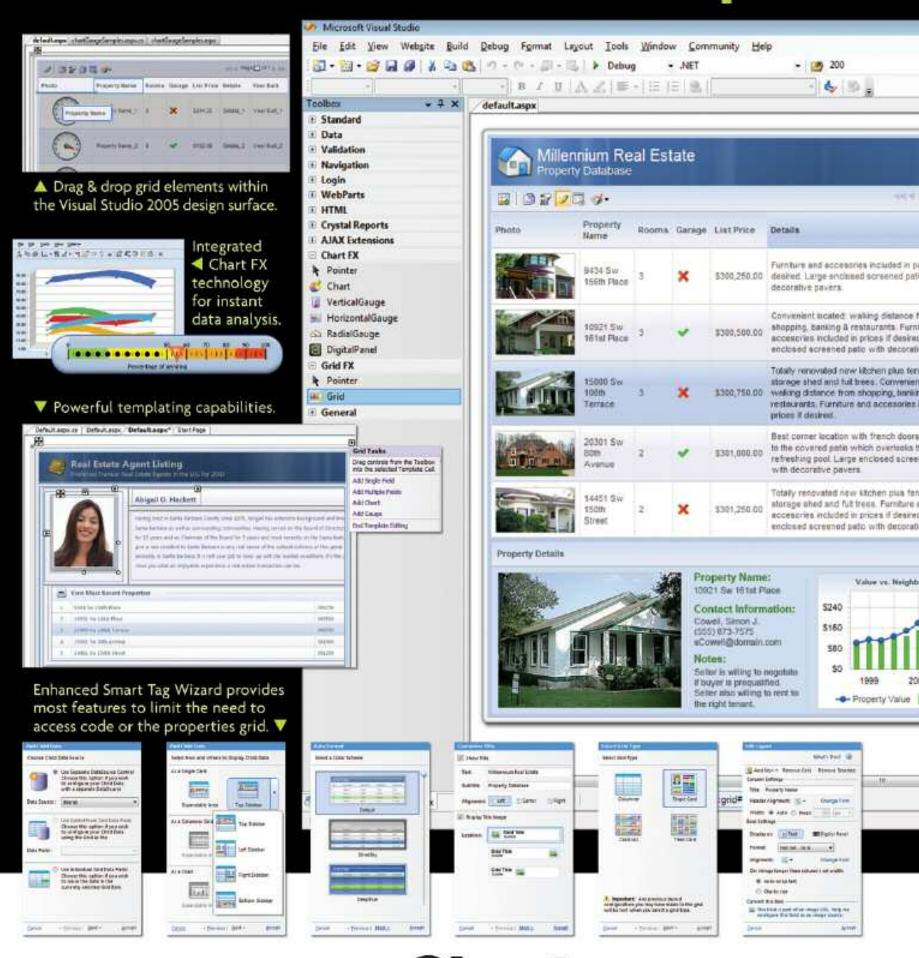
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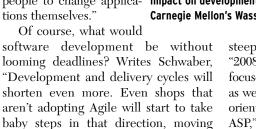




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new management skills. Few shops have made the process and tooling changes necessary to support simple sourcing arrangements, let alone complex application assembly efforts."

Compounding these difficulties will be the need for change engineering, noted Schwaber. "Rapidly changing business conditions will require that software be built for change. App dev professionals will begin to design applications to meet indeterminate future requirements, relying heavily on tools that empower business- Mobile devices will have a big



Finally, she expects applications will be bigger and more data intensive. "Two trends will conspire to disrupt program-

from waterfall to iterative and from

three-month to one-month iterations."

ming practices: the challenge of handling ever larger volumes of transactions and data, and the arrival of new technologies and architectures that make this possible. The role of business analyst will change

> and grow in importance. Enterprises have historically undervalued business analysts," wrote Schwaber. "This won't be possible in 2008, as nearly every trend affecting application development increases their importance."



people to change applica- impact on development, says Carnegie Mellon's Wasserman.

STAY ON THE SCRIPT

Lori MacVittie, author of "XAML In A Nutshell" and the technical marketing manager for application services at F5 Networks, expects 2008 to be a year

steeping in SOA-focused languages. "2008 will see continued growth in SOAfocused languages such as Java and .NET, as well as even more scripting and Weboriented languages like PHP, Ruby and ASP," wrote MacVittie in her predictions for SD Times.

While no one would be silly enough to claim that C++ isn't higher performing and more efficient than interpreted and scripting-based languages," wrote

APPS

ALL ROADS LEAD TO WPF.

At the intersection of graphics, multimedia and interface design is Mobiform. As one of the earliest adopters of Microsoft* WPF (Windows Presentation Foundation) technology Mobiform has created intuitive, customizable visual design products and components for the .NET development community.

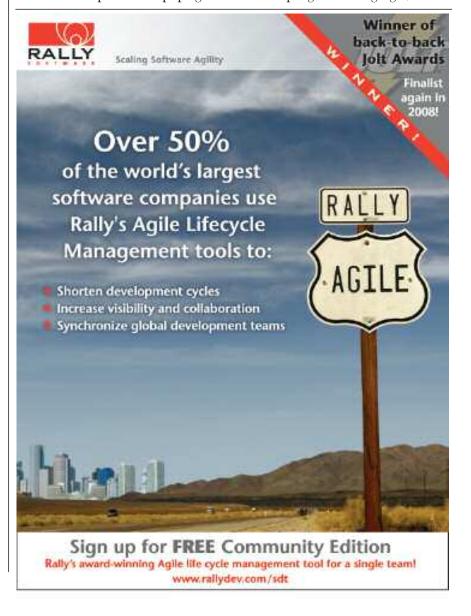
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THE CONVENENCE OF DOD MENTS MEDIA AND APPLICATIONS



in 2008

MacVittie, "the fact is that our pool of skilled C++ developers is dwindling rapidly, and colleges have long since moved to teaching in Java, VB and .NET-focused languages. While those of us who cut our teeth on C++ would love to see a resurgence, it just wasn't designed with the Web in mind, and it is the Web... that will continue to drive development in 2008."

Dianne Siebold, programming writer at Microsoft, turned her sights on best practices for 2008. Rather than predicting trends, she offered up numerous ways for developers to stay on top of their workloads.

"In my experience, there are two types of software developers," wrote Siebold. "The first is the one on the other side of the virtual wall over which the business analyst or project manager throws the specs. Then there's the developer that understands the big picture and where their work fits in. They may meet with customers (whether they are internal or external), but at the very least they understand their users and how they work. In the past, it was enough just to code software to a spec. But now, the more you know your users, their jobs and how they'll use your software, the more valuable you are. This skill naturally enables you to create better software; but it also adds dimension to your career and makes you a more likely candidate for raises, bonuses or promotions. If your company isn't into those types of rewards then it makes you all the more attractive to potential employers.

"Get good at distributed collaboration," added Siebold. "Developers will increasingly be required to work in and create software for a global environment. As a software professional, you'll be tapped to work with customers and co-workers in other cities and countries. This globally distributed marketplace is caused by many factors: outsourcing, the need for companies with different specialties to collaborate or simply the global nature of the marketplace. Become adept at working in projects that span different cultures, languages and time zones. Communication is a priority more than ever, and the tools are there to support it: e-mail, video conferencing, online meetings and instant messaging to name a few. Collaborating successfully in a distributed team will be more important than ever in the coming year."

No matter what 2008 holds, all of our analysts can agree that adopting agile processes, gathering better metrics and keeping on top of roadmaps are keys to success. With the Web still growing every day and mobile devices spreading throughout the world, there's more call for quality software on tighter deadlines than ever. Hopefully, 2008 will also be a year of meeting those deadlines.

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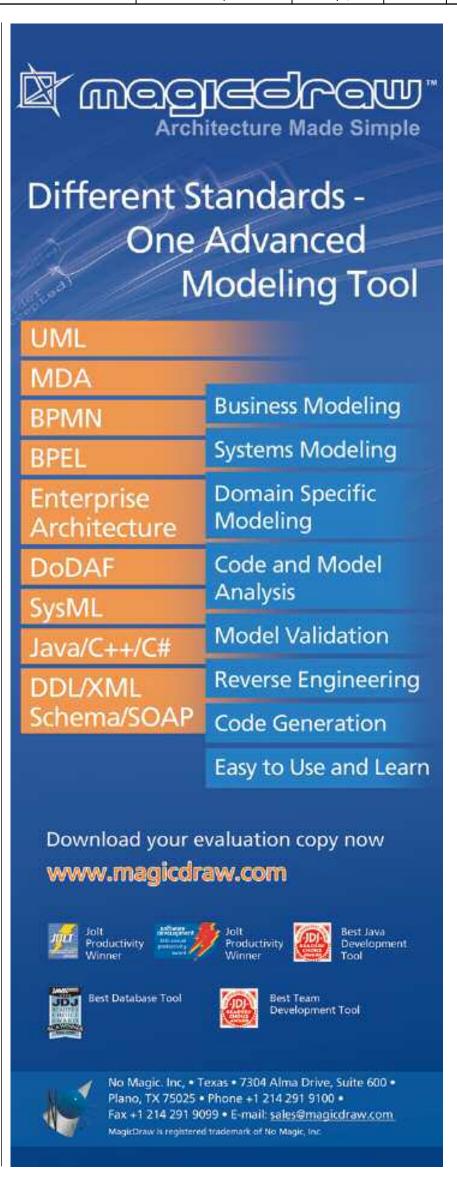


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Microsoft Bosses Taking Their Leave

that he would retire in September, and would continue to serve as a member of the company's senior leadership team until then. Raikes' run with Microsoft lasted 26 years;

Stephen Elop, 44, former COO of Juniper Networks, will replace him in September. Elop, whose pedigree includes being president and CEO of Macromedia and a one-time Adobe executive, is ostensibly at

home with the notion of the Web playing a larger role as a platform for development. Raikes' legacy will remain largely confined to the client-server application paradigm.

In an e-mail sent to all

Steve Ballmer gave Raikes an effusive sendoff, highlighting his contributions to Microsoft and calling him a "great business partner and close friend."

Many Microsoft watchers

considered Raikes to be a candidate to become the company's next CEO.

Ballmer claimed that Raikes was departing the company at a time when it is "in great shape" and the Business Division has "incredible momentum." As part of the transition, Microsoft's Server and Tools business unit will be moved out of the Business Division, and Bob Muglia, senior vice president of the Server and Tools business unit, will report directly to Ballmer.

Acquisitions head Bruce Jaffe will be leaving his post on Feb. 29. Jaffe oversaw more than 40 acquisitions over the past two years, including the US\$6 billion buyout of aQuantive. Also departing is Charles Fitzgerald, Microsoft's general manager of platform strategy.

Most recently, Fitzgerald had been a primary spokesman for Microsoft's software and services strategy. Microsoft officials said he is leaving to join a startup.

The latest in the string of departures confirmed as of press time was Robert Short, corporate vice president on the Windows Core Technology team, who opted not to return to his position following a yearlong sabbatical. He joined Microsoft in 1988 and was part of the first Windows NT development team.

Yankee Group analyst Laura DiDio said that Microsoft was in the midst of a generational shift. "A lot of theses people came up with Gates and Ballmer and have been there for a generation, and they are multimillionaires. If you won the lottery tomorrow, how long would it take you to clean out your desk and do something else?" DiDio quipped.

Gates will cease working at Microsoft full time in June, but will carry on as chairman and advisor while devoting more of his time to his charitable work.

The executive turnover comes at a time when some industry watchers are wondering about the company's financial state.

The company has underperformed all of the major stock indices for four of the past five years, and its current dividend yield was 1.24 percent as of Jan. 2.

DiDio dismissed the notion of a shareholder revolt, noting that other high-profile members of Microsoft's old guard were still present, including Muglia and chief research and strategy officer Craig Mundie.

"There are a few cracks showing, and it is to be expected." ■

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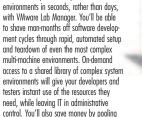
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Tool Maker Marketing Slants Toward Agile

◄ continued from page 5 agile methodologies. Borland, for example, is developing a Scrum template for its StarTeam change management offering. "Tools are at the center of the daily stand up meeting," said the company's vice president of product marketing, Marc Brown, referring to the Scrum practice of each team standing up to answer three questions: What are you doing today? What will you do tomorrow? What obstacles are in your way?

Forrester analyst Carey Schwaber, author of "The Truth About Agile Processes," an August 2007 report, said the templates can be useful, but sometimes they are more of a marketing statement than anything else. She noted that when Microsoft released MSF for Agile Software, a template for Visual Studio Team System, the offering was widely criticized by members of the agile community for inaccurately representing agile principles.

GET OUT OF THE WAY

Schwaber said that although virtually all tool makers have responded to agile development, and their marketing efforts reflect that, full-featured, high-end ALM suites aren't the right solution for agile development. "Even if they add support for agile teams, teams won't want to use them." There is a lot of overhead associated with such offerings, she said. "People spend a lot of time routing things to each other." Lightweight tools, which are often open source (see sidebar), are a better fit for agile, she said. "They do one thing well, and they have open interfaces," which makes it easy to link them to other offerings, argued Schwaber.

But as agile practices are applied to larger teams whose members work at geographically dispersed locations, the influx of ALM tools is inevitable, said Ross Pettit, client principal for the consultancy ThoughtWorks. "On the one hand, agile is focused on people aspects," he said. "But we are hearing from customers that ALM 2.0 tools accommodate agile development. They extend the way agile teams work."

ALM 2.0 refers to ALM suites that focus heavily on

communication and collaboration, explained Voke analyst Theresa Lanowitz. "There is an emphasis on breaking down tasks into smaller chunks, working with partners and other

development stakeholders [outside company walls]." Asked whether such ALM suites are a good fit for agile development, Borland technical account director Pete Derry said yes.

"You can achieve a lot in a small that process and tools are team with very lightweight tools. But in a more complex environment, [ALM suites] are essential." Derry also noted that the Agile Manifesto says

important, too—not just people and interactions. Lanowitz took it one step further: "If you have right processes and tools, you get the right interactions."



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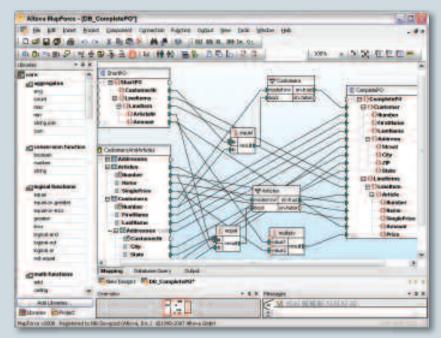
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Microsoft Bets On LINQ Implementation to Beat Java In

◄ continued from page 1

ty Process executive committee] thought that the developer should use," Hynds noted, adding that Microsoft's LINQ implementation deals with data in a more "conversant" way.

Hynds is a regional director of Microsoft's developer platform evangelism group, volunteers recognized by the company for technical expertise.

OTHER OPTIONS

RedMonk analyst Stephen O'Grady noted that while there may not currently be equivalent functionality within the Java platform, there are options for Java persistence that offer "LINQ-like functionality," naming db4objects as an example.

Db4objects is an open source object database for Java and .NET developers, which uses a technology called Native Query that can optimize native language constructs into queries without relying on a particular language's syntactical extensions.

Jonathan Bruce, program manager for the .NET technology group at DataDirect Technologies, and formerly JDBC specification lead and architect for the Java platform at Sun, said that developers are "clearly excited" about what Microsoft has come up with, but cautioned that it is not as original as they make it out to be.

LINQ, Bruce said, is "elegantly packaged and tightly coupled with C#" and Visual Basic, but called the notion of tightly coupling queries to languages nothing new, citing embedded SQL as an example.

"What's different is that they are neutralizing the coupling between the query and data model, using the same query constructs against multiple data models," he added. "It is a graceful part of the day-to-day programming language and easy to use with day-to-day programming models."

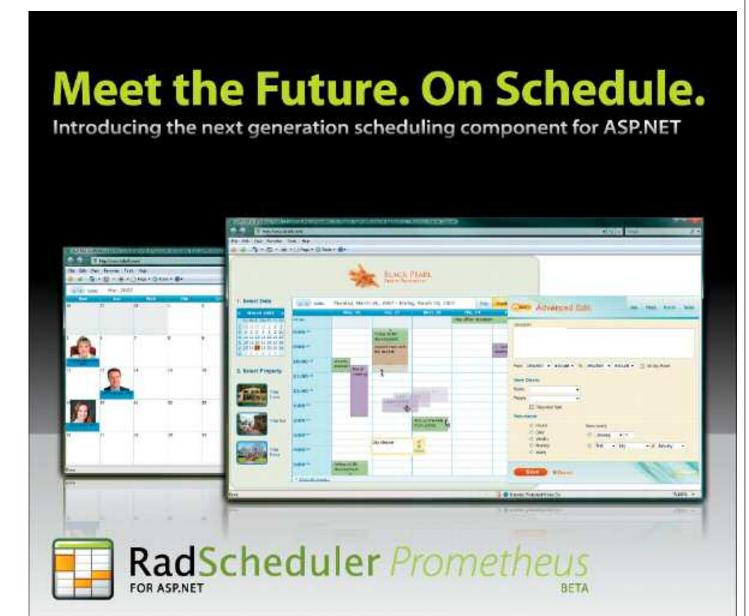
Another advantage, he said, is that LINQ "takes the pain" out of allowing query-based programming, and that instead of relying on databases, it is done programmatically. "It is a big change for a lot of people," he conceded.

ENTER THE CAVEATS

DataDirect's Bruce acknowledged that from a productivity point of view, LINQ combined with its tooling gives .NET shops a productivity advantage that the Java community cannot match. He credits Microsoft's ability to "package [productivity patterns and tooling] all up into something useful."

That said, he noted that LINQ is an unproven technology that is new to the market and said that he could not imagine anyone making corporate bets on LINQ just yet. "On the Java side, data access is rounded and stable. As a technology officer, it is an easier bet to make [on] what will reduce risks from a data perspective," he explained.

Likewise, he noted that LINQ is highly static in nature, and that embedding queries within an application presents



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challenges to programming patterns. He explained that LINQ queries are tightly coupled to the source code and that LINQ makes it difficult to build dynamic queries.

"There is a ways to go before LINQ has broad acceptance across the data access market," Bruce said, adding that constructing more queries in a more dynamic manner is the "next horizon" for LINQ.

Bruce said that Java is making strides to answer LINQ's progress by implementing scriptable languages such as Groovy and JRuby, making the platform more versatile by consuming functional languages that are written as scripts. He also cited the IBM JLINQ application framework as a worthwhile but "poorly marketed" attempt to answer the call of LINQ.

Another example is XQuery, a language designed to query XML data. XQuery, he said, does a better job with data from many venues because of XML's flexibility. By contrast, he claimed, the current implementation of

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◄ continued from page 1 customer service sense."

Gartner vice president Mark Driver, a research analyst, said Oracle could benefit both from BEA's "extremely large and fairly loyal user base" and "from expanding and extending out its middleware using BEA's technology."

He also cited BEA's leading position in optimizing Java on virtualized environments as another rationale for the acquisition. BEA implements its WebLogic application server with the JRockit JVM optimized to run on a hypervisor for its virtualization solution.

BEA also has touted the benefits of tying business process management to service-oriented architecture; its integration approach has been among the industry leaders for some time, according to Driver.

Oracle has made 35 acquisitions since 2005 costing about \$31 billion. The company has a market capitalization of about \$110 billion. ■

LINQ is very targeted to what the developer is querying, and the ability to "mash up data sources" has not been delivered yet, Bruce explained.

He believes that a LINQ

implementation combined with XQuery would enable Java to "reposition [itself] strongly against what Microsoft has done." However, he added that the Java standards process

could delay any Java-based alternative because it is rigid and slow. Some technologies, though, are used in conjunction with the platform specifications when they reach a tipping

point; Hibernate is an example.

"If anyone ever comes up with a LINQ implementation even close to Microsoft's," he concluded, "it will never be integrated into the platform as well as Microsoft LINQ," adding, "It will always be an uphill battle to make an applesto-apples comparison." ■



34 NEWS | Software Development Times | February 1, 2008 | www.sdtimes.com

Software Developers Reveal Resolutions for 2008

Open source, requirements management among topics being emphasized

BY ALEX HANDY

Resolutions don't have to hurt. We asked some well-known developers in the software world what they're planning to change in 2008, and not one of them mentioned painful sit-ups or grueling workout sessions. Instead, it looks like 2008 will see more people contributing to open-source projects and more use of scripting languages. That's if everyone can stick to their guns and keep up with their resolutions.



MARK
SHUTTLEWORTH
Founder, Canonical, Ltd.
Second space tourist
Chief force behind
Ubuntu Linux

My New Year's resolution is to try to find a path to better collaboration between Ubuntu, Red Hat, SUSE and Debian around their major long-term releases: Ubuntu LTS, RHEL, SLES. I think we will lift the quality of interaction between all upstream [developers] and all distributions if we can get our act together in this regard! I would like to see some synchronicity in the selection of kernel versions for those, for example.



Red Hat employees are the most prolific contributors to the Linux kernel. We expect this to continue in 2008. Much of this development is done in collaboration with our OEM and chip vendor partners. This unsung work, from NetworkManager to the Custom Spins capability, has been a catalyst for the dramatic growth of Fedora adoption, which we intend to vigorously pursue. Meanwhile, in the commercial solutions arena, focus areas include virtualization with Xen, KVM, libvirt and paravirtualized drivers; messaging with AMQP; GCC compiler/tool enhancements; kernel real-time enhancements; security infrastructure driven from the www.freeipa.org project; and ongoing performance enhancements in many areas, [including] system administration. All of these technologies are directly contributed to the open-source community. Our overarching goal is

that, in combination with the rapid growth of our JBoss and MetaMatrix middleware technologies, we will continuously push the envelope of high-end capabilities and cost reduction.



GRADY BOOCH
IBM Fellow & Chief
Scientist, IBM Rational
Co-creator of Unified
Modeling Language

hereby resolve to travel less (by doing more work in virtual worlds), to eschew mind-numbing meetings (but to not sacrifice fulfilling human relations), to speak truth to power (yet with compassion and firmness), and to always remember what a privilege and a responsibility it is to be a software developer.



BILL ROTHVice President of the
Workshop Business Unit,
BEA Systems

resolve to better manage the requirements I get from my customers so I can map their requests better directly to the features we implement. I also resolve to praise my developers more and to celebrate team successes more often. I also resolve to take fewer trips to the espresso machine.



Author of
"Software Estimation:
Demystifying the Black Art"

resolve to conduct a survey on the use of software development best practices, write more blog entries, finish my book on executive software management, and spend more time working directly with the executives who influence the software practices their organizations use.



ROBERT BREWIN
Distinguished Engineer
and CTO of Software,
Sun Microsystems

In the coming year, I would like to see more active development on new languages and frameworks, ideally leveraging Java the platform as opposed to just the programming language. The popularity of dynamic and scripting languages, such as Python/Jython, Ruby/ IRuby and Groovy is largely driven by the needs of developers who are trying to rapidly and easily build applications for the next generation Web. I'd like to see more internal projects leveraging those same languages and frameworks, partly because of their effectiveness (and to gauge their effectiveness, sometimes on large pieces of software) but to socialize, improve our understanding of these developer tools and ideally optimize their usefulness on platforms like Java, Java Enterprise System and Solaris... something that will not only benefit us, but our customers and developers as well.



DR. TIM MARSLAND
Distinguished Engineer and
CTO of the Operating
Platforms Organization,
Sun Microsystems

This year I plan to package up some more of my favorite open-source components for OpenSolaris and think about what we can do for developers and virtual appliances. I would like to move yet more of our source code repos[itories] to our preferred SCM technologies. I'd like to figure out how we're going to do defect tracking across Sun's SW portfolio and evolve our systems architecture process for software.



JASON VAN ZYL Creator of Maven

I'm committed to making Maven work flawlessly for anyone who tries to use it. I will find the necessary resources and corporate support to improve Maven, the plug-ins, the documentation and IDE integration. This will be the year that Maven becomes the de facto build and release management framework for Iava.



ANDREW BINSTOCK
SD Times columnist
Author of "Programming
With Intel Extended
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resolve to write more unit tests, automate all builds using CI [continuous integration], integrate metrics better into the development cycle, learn Groovy better, and write at least one Spring-based application. I can see already that I won't be fulfilling all my resolutions this year.



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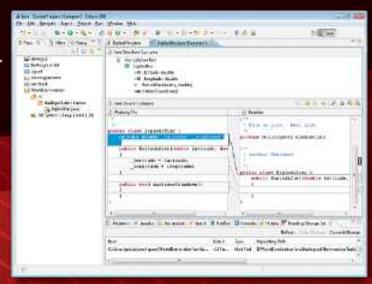
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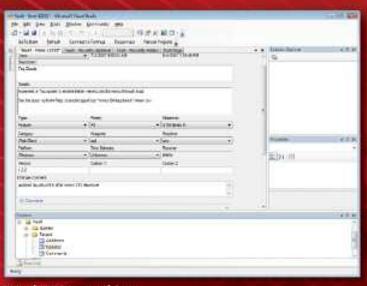


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Better Make That a Stretch

LiMo Foundation adds members and tooling

BY P.J. CONNOLLY

January was a busy month for the LiMo Foundation, which saw new developments in its Common Integration Environment and new members as well.

The foundation, established a year ago by mobile industry leaders Motorola, NEC, NTT DoCoMo, Panasonic, Samsung and Vodafone, is dedicated to the development of an open and globally consistent Linux-based platform for mobile electronics. The Common Integration Environment, or CIE, is the core platform for future development and testing of the LiMo platform.

Azingo, a Sunnyvale, Calif.-based provider of open mobile phone software and services, announced at the International Consumer Electronics Show in Las Vegas on Jan. 7 that the LiMo Foundation had selected its software phone emulator and associated reference applications and tools for the CIE.

Having changed its name from Celunite at the beginning of 2008, the privately-held Azingo will supply software management, testing and bug tracking tools to the project, with the goal of reducing fragmentation in the mobile Linux market, and eliminating wherever possible the

amount of wheel redesign that LiMo participants would have to perform.

NO CIE IN THE SKY

LiMo selected Azingo's software as ideally suited to management, integration and testing of CIE, noted LiMo Foundation executive director Morgan Gillis in a prepared statement. Added Azingo CEO Mahesh Veerina, "We are honored that the industry's leading operators and handset manufacturers have chosen to place their trust in us."

According to the foundation, the CIE will be implemented in 2008. LiMo's own platform integration team, and each member's engineering team, will begin using CIE for integrating and validating future software releases. Among the benefits the foundation expects to realize from the use of CIE include the shortening of platform release schedules, the maximizing of developer collaboration, and the elimination of many redundant integration efforts.

Along that line, the foundation also

announced on Jan. 7 that five new members had joined. The recruits are: Acrodea, the Japanese specialists in user interface and messaging; ETRI, a South Korean mobile R&D house; China's Huawei, which manufactures devices; Purple Labs, mobile Linux specialists headquartered in France; and Trolltech of Norway, bringing its mobile development framework to the table.

"This latest wave of new members brings further mobile device and platform integration leaders into the LiMo ecosystem," noted foundation head Gillis in the announcement. "We are delighted to see them joining forces with existing LiMo members to accelerate the delivery of innovative new handsets, applications and services."

OPEN CORE PROTOCOL PARTNERS OFF TO FAST START

BY P.J. CONNOLLY

While some folks were recovering from their holidays, one consortium hit the ground running.

The Open Core Protocol International Partnership (OCP-IP) got the New Year off to a rousing start, adding six members and noting the beginning of the review of a new debug specification.

The new members, announced on Jan. 7, are Comtech EF Data, a manufacturer of satellite communications equipment; CréVinn Teoranta, ASIC and core

designers; ENSTA (École nationale supérieure de techniques avancées), France's National Higher School of Advanced Techniques; Princeton University; Silicon Image, also in the business of core design; and Tata Elxsi, the technology arm of India's Tata Group.

The next day, OCP-IP revealed that members had begun reviewing a new debug specification that supports a uniform method of accessing and analyzing on-chip systems and embedded information at the core, multicore and system

level. It implements a debug interface socket that can be added to cores and blocks of intellectual property.

The goal is to address the increasingly diverse needs for prototyping hardware, software and mixed systems-onchip, and to be compatible with other industry standards efforts, the group noted in its announcement.

The debug specification is a loose definition of requirements, said the group, leaving specific implementation to core designers and tool vendors.





Spec for High-Def Wireless Video Launched

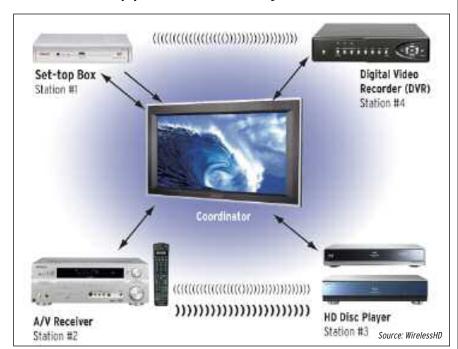
Multi-vendor group offers MPAA-approved security in 60GHz band

BY P.J. CONNOLLY

The WirelessHD group has announced the completion and launch of what it called "the first wireless specification for high-definition baseband video transmission."

The group, which began its work in October 2006, also announced on Jan. 3 that it had begun development of a compliance plan and the associated test specifications, as well as the allimportant logo that indicates an interoperable product. WirelessHD is also inviting interested companies to join the group as an adopter member; currently there are 40 early adopter and promoter members. The work is a joint effort of Intel, LG Electronics, Matsushita (Panasonic), NEC, Samsung, SiBEAM, Sony and Toshiba.

The specification, also known as WirelessHD or WiHD, is a digital interface designed with a broad range of devices in mind, including camcorders, disc players, gaming consoles, set-top boxes and televisions. It offers a 4 gigabit-per-second digital wireless interface that operates in the unlicensed 60GHz band and represents what the group calls the first consumer



The coordinating device in a wireless video area network (WVAN) prioritizes resources for stations, which can act as either video sources, or targets, also called video sinks.

use of that frequency.

WiHD also includes what the group calls "secure" content protection technology and provisions for universal remote control of all WiHD devices.

The Motion Picture Association of America is working with the group to help deliver a scheme that will allow content to be shared among a variety of devices in a household.

HOSTOPIA SHOWS LOVE FOR PALM

Wireless mobility is a hot-button issue today, and sometimes the simplest data, personal information such as address books and schedules, can be the most

Hostopia, a provider of Web services for resale as well as direct consumption, does the manufacturers one better with the SyncML-based SyncJe, for synchronizing personal data such as calendars and contacts wirelessly, without the need for a USB cradle. Hostopia's Nexthaus unit released a version of SyncJe for Palm OS on Jan. 3. SyncJe installs directly onto the device and offers an automatic synchronization scheduler.

Other platforms already served by SyncJe include devices such as Blackberry and iPhone, and enterprise e-mail platforms such as IBM Lotus Notes and Microsoft Outlook.

Hostopia plans to market SyncJe through direct online sales and the company's wholesale channel; Hostopia is also introducing a program, dubbed Nexthaus Resellers, that will allow systems integrators, telecom services providers and VARs to market SyncJe from their own Web sites while collecting commissions from Nexthaus.



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Following the Leader

Component vendors strive to keep pace with Microsoft's platform initiatives

BY DAVID WORTHINGTON

omponent vendors are inextricably tied to the success or failure of Microsoft's platform initiatives. They ride on the very crest of its technology waves and rely upon their expertise and ingenuity to produce bleeding-edge, functional software controls while the rest of us are still scratching our heads.

Microsoft introduced an array of new Web development technologies and new architectural patterns and tooling over the past year. Component vendors have remained in lockstep with Microsoft, and occasionally getting ahead of consumer demand, to be primed and ready for the next big thing.

SD Times interviewed leading executives in the components space to explore how their companies are leveraging Microsoft's latest initiatives, attaining their unique insights and perspectives into what it is like to work with the latest Microsoft technology.

One of the first technologies to debut last year was ASP.NET AJAX, formerly known by the code-name "Atlas." It extends the ASP.NET framework with AJAX functionality and consists of client- and server-side components that permit developers to create ASP.NET 2.0 Web applications that exchange smaller amounts of information with servers, to provide more immediate experiences on the Web.

It made a standalone debut in January 2007 and was subsequently integrated into the .NET Framework. Version 3.5 of the framework, which includes ASP.NET AJAX, shipped with Visual Studio 2008 in November 2007.

ComponentArt president Miljan Braticevic said that Microsoft's decision to merge ASP.NET AJAX with client-side component model that provides a standardized platform upon which to build controls and base

"Up until this point," he added, "there was only a server-side control model, and client-side logic was done ad hoc; this augments server-side functionality. AJAX took it [ASP.NET 2.0] one step; client-side functionality took it another."

'LINQ-ING' THE CLIENTSIDE WITH SERVICES

Braticevic also extolled the framework's ability to bind data to Web services from client-side code using Language Integrated Query (LINQ). "UI components are now able to bind directly with Web services using a couple lines of JavaScript code to populate UI [user interface] elements. It bypasses ASP.NET Page Framework and is extremely efficient."

He explained that before LINO, the client-side control would communicate with the server-side control and be brokered by it, and emphasized that "a bit of hacking" was involved with AJAX coding.

Braticevic added that the client-side functionality is the reason why ComponentArt could implement direct data binding to Web services in its controls.

Todd Anglin, Telerik's technical evangelist, said that the company recognized that it needed to transition to the ASP.NET AJAX framework a year ago. Client side libraries have imparted Telerik's ASP.NET AJAX controls with "incredible performance improvements" and it has added new features to its controls by taking advantage of the libraries, he noted. "On the server side there is a single assembly architecture. Controls combine script requests and style sheets into a

tent rendered to a page."

Steve Dadoly, vice president of engineering for Infragistics, said that Visual Studio 2008 made it easier for developers to use ASP.NET AJAX components, crediting features such as IntelliSense autocompletion for JavaScript, and its new ASP.NET Web designer and CSS designer for the productivity gains.

Dadoly added that LINQ-aware components have the potential to change the way that business applications are built, making them cleaner and simpler. "It's like how garbage collection in the first version of .NET made development easier. You can code against databases: Strongly typing everything allows you to have no strings in your database code.'

There is even a business case for ASP.NET AJAX. Atalasoft CEO Bill Bither said that even though Atalasoft was working with AJAX technology before the "AJAX" acronym was coined, it has leveraged its enhancements and the buzz about it in its product marketing. "We made sure that we supported ASP.NET AJAX," Bither added.

NOT MUCH UPTAKE FOR WPF

ASP.NET AJAX's meteoric rise over the past year is contrasted by the muted reception developers gave Windows Presentation Foundation (WPF). While full suites of ASP.NET AJAX components are already on the market or soon will be, demand for WPF controls is lower, according to Telerik's Anglin.

> Anglin remarked that WPF, which has been on the market since 2006, still feels like a relatively new framework. "There is less rapid uptake versus Windows Forms. We thought Vista would be the driving force for WPF applications; Vista has had [a] rough time getting penetra-

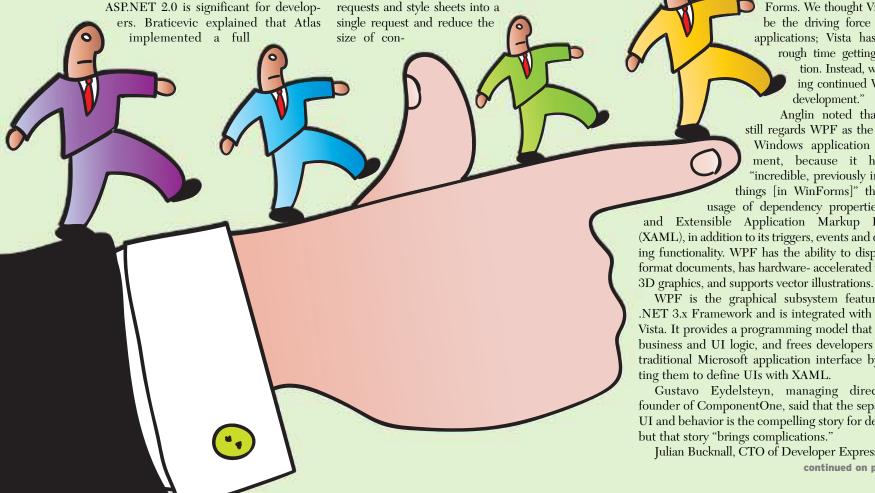
tion. Instead, we are seeing continued WinForms development." Anglin noted that Telerik

still regards WPF as the future of Windows application development, because it has done "incredible, previously impossible things [in WinForms]" through its usage of dependency properties, Styles, and Extensible Application Markup Language (XAML), in addition to its triggers, events and data binding functionality. WPF has the ability to display fixedformat documents, has hardware- accelerated video and

WPF is the graphical subsystem feature of the .NET 3.x Framework and is integrated with Windows Vista. It provides a programming model that separates business and UI logic, and frees developers from the traditional Microsoft application interface by permitting them to define UIs with XAML.

Gustavo Eydelsteyn, managing director and founder of ComponentOne, said that the separation of UI and behavior is the compelling story for developers, but that story "brings complications."

Julian Bucknall, CTO of Developer Express, said "In continued on page 40 ▶



Component Developers Follow Along

◄ continued from page 39
reality, there is a lot of marketing-type talk coming out of Microsoft. When you start using it, it's a long way to go to create visual components for WPF. People understand XAML, [and application] styling... but to translate that into a valuable component is hard work."

Software FX CEO Rene Garcia noted that developing with WPF is unique because applications are customized using XAML templates. WinForms controls each have their own particular shape and border.

In contrast, Chart FX for Visual Studio 2005, the company's suite of charting components, provided over 1,000 predefined drop-in properties and methods to customize the way a chart looks, whereas WPF is not as verbose and developers are no longer confined to a single template, he explained.

The company now has a consulting service intended to help developers with styling and integrating charts, using the increased number of design possibilities XAML presents. "People don't have time or luxury to focus on chart [components]."

Garcia said that customers that look to component vendors for prepackaged software might encounter unanticipated complications. "The problem right now is that WPF provides so many capabilities that you really have no time to tackle problems completely, and customers need assistance to do it," he said.

IF YOU BUILD IT ...

Atalasoft's Bither noted that the new UI paradigm of WPF is especially attractive to component vendors. That said, Bither has not yet seen many line-of-business applications using WPF.

"In our business we must leverage new technology as soon as it makes sense," he explained. "When it [WPF] does become more popular in business applications, we have technology to support that. By the time a customer really needs to use it, we should have a lot of functionality there."

DevExpress' Bucknall speculated that people are not sure how WPF works with business applications, because of its focus on visualization. Bucknall wondered, "Are people ready to think about how business appli-

cations visualize data? Does a payroll application really need a better visualization tool?"

Bucknall faulted Microsoft for not having designer and developer tools to create applications when it released Windows Vista and WPF. He explained that component vendors such as DevExpress are very dependent on tooling, because it is a lot easier for developers to program and use components when "not worrying about the designer."

"In reality, developers under deadline do not want to read documentation, and want a tool to use components," he added. "Yes, it [WPF] was available in Vista, but no, [there was] no stable design tool for developers." Eydelsteyn recommended that enterprise developers hold off on WPF until the next version of the tooling becomes available. "WPF is ready for prime time, but the tooling isn't there to do what WinForms



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does today," he remarked.

Eydelsteyn said that the company was being more cautious with WPF than Microsoft's nascent Silverlight runtimes because it makes more sense commercially. He cited development

opers' interest in Silverlight, which is still a work in progress.

THE YEAR OF SILVERLIGHT?

Silverlight is a cross-platform browser plug-in for Web applications, developed under the codename Windows Presentation Foundation/Everywhere. Version 2.0 of Silverlight contains a slimmed down version of Microsoft's Common Language Runtime (CLR) that the software giant has dubbed "Core CLR "

Telerik's Anglin said that Silverlight 2.0, presently an alpha release, has component vendors across the board working furiously to have a full suite ready when its final version ships. "Silverlight

has to prove itself as a viable platform, yet energy is being invested there in the component space. We base our plans on interest from customers, and 2008 will be the year of Silverlight."

Anglin expects Silverlight 2.0 to go gold in the summer of 2008 and that a beta build will be widely distributed at MIX 08 in Las Vegas in March.

Silverlight's many attributes have captivated developers, including its convergence with other Microsoft technologies, a perceived ease of development, and promises of better performance. Vendors predict that it could drive WPF development and displace other Web application technologies.

Component One's Eydelsteyn said that Silverlight's convergence with other Microsoft technologies makes it compelling. "Instead of learning JavaScript and other technologies, people are very much at home in CLR languages. They can write 'performant' and rich applications. [Managed code such as Silverlight 2.0] is the direction the whole industry will move to."

Atalasoft's Bither said that although few developers are using WPF in line-of-business applications now, Silverlight would change that, because of its roots in WPF. "If it weren't for Silverlight, WPF would be a niche programming environment for cool flashy consumer applications. You can develop in WPF and [then] fairly easily port to Silverlight," he added.

Software FX ships a server-side technology that generates Silverlight native content using XAML from its WPF Chart FX controls as a data source. According to Garcia, the company will ultimately integrate its components into the Microsoft Expression Blend interface design tool to provide proper tooling as the platform matures. Other vendors, including ComponentArt, ComponentOne and Infragistics, have prototype Silverlight controls and integrations.

Garcia said that Silverlight adds a new level of interaction in the UI such as timelines and other "'graphical pizzazz' AJAX cannot provide."

DevExpress' Bucknall envisions Silverlight eventually subsuming ASP.NET AJAX. DevExpress' ASP.NET grid controls are optimized for displaying large data sets, but he contends that Silverlight is a faster technology.

"For certain types of applicantinued on page 42 ▶



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Microsoft Technologies Point Way

 ✓ continued from page 41
 cations ASP.NET will be thrown aside and Silverlight will be the thing to use," he added. "In a sense, Microsoft is undercutting our work [with ASP.NET] over the past year.

But if Silverlight 2.0 came out tomorrow, there will still be an appreciable amount of time for people to understand how to use it in their scenario and what kind of components they need."

He drew a comparison with

WPF's relationship to Win-Forms, explaining that WPF has not sounded the death knell for those applications. "It will, but the whole world has to catch up. The WinForms environment is stable and everyone understands it," Bucknall reasoned.

Bither, Garcia and Sunny Wong, ComponentOne's managing director and founder, all view Silverlight as a competitor to Adobe's Flash platform. Wong predicts that some of the Web application market segment will be taken over by Silverlight due to its ease of development, use of .NET programming languages, and companies' longstanding investments in Visual Studio.

"Silverlight goes right in the face of Flash," said Bither. "It will be interesting to see what happens with [Adobe] Flex and Silverlight. Silverlight is coming on real fast."

Andrew Flick, an Infragistics product manager, summed up Silverlight's usefulness as follows: It helps developers get the job done. "Developers can target business development on all different platforms," he said, noting that while Silverlight was capable of producing flashy visuals, the UI cannot change radically because the business enduser might be uncomfortable with too much creative license.

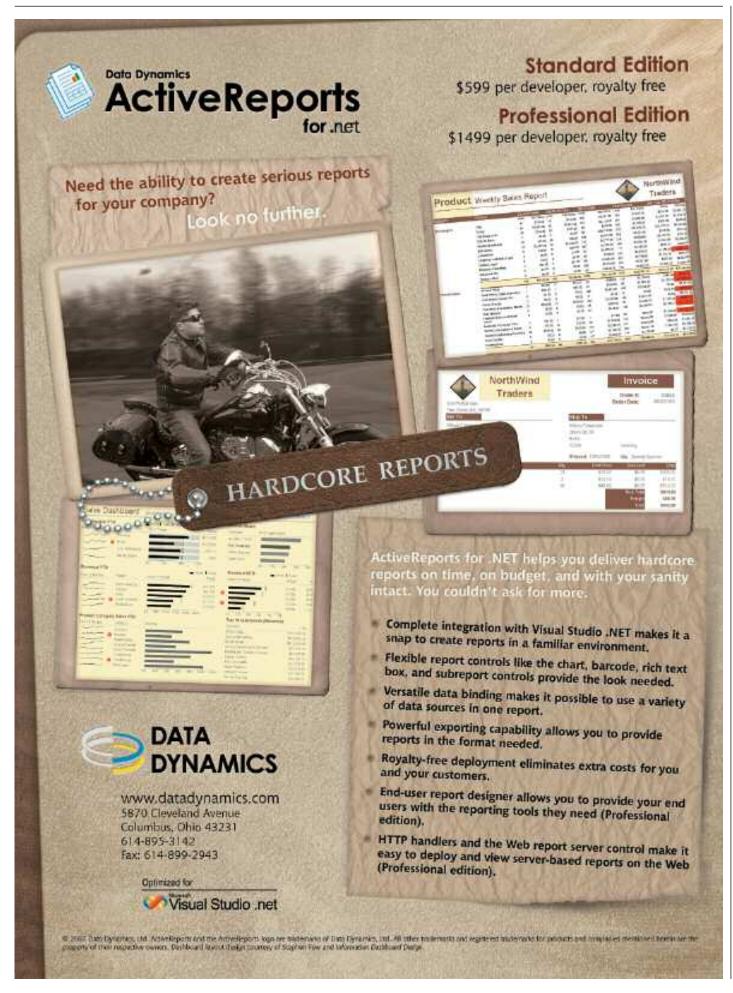
MODELING THE FUTURE

Microsoft's ASP.NET Model View Controller architecture was introduced as a Community Technology Preview in October 2007. MVC permits developers to maintain separation of concerns (tiers) in their applications. That separation fosters the creation of more self-aware components that have fewer dependencies on unrelated components.

ComponentArt's Braticevic explained that the model bypasses the ASP.NET Web Forms life cycle. According to Microsoft, Web Forms is a programming model built around server-side controls that render their own UIs by generating HTML to return to clients and firing events that are handled by server-side scripts.

With MVC, Braticevic explained, "we bring the ability to implement views as a collection of Web services. We have client-side controls that bind directly with those services. Our bread and butter is augmenting to add value. With the MVC framework we see great opportunity to use technology on the client side and bind to Web services to add something really nice to the [.NET] Framework," he added.

Telerik's Anglin was more cautious. "The way you think of components today is not the way they will work in MVC. We've got it in our labs and intend to support it. But we have no definitive plans. MVC is experimental and a polarizing framework: Some developers will love



for New Components

it, others will hate it," he said.

ComponentOne and Infragistics are also evaluating MVC, but DevExpress' Bucknall expressed no interest, stating that the MVC was not aligned to its strategy regarding managed code.

Software FX's Garcia remarked that Microsoft was "choking" developers with too many technologies being introduced concurrently, adding that in terms of adoption, developers question when to start using new technology with a whirlwind of new releases. "They only have so much bandwidth to process [new] technologies," he said.

John Ayers, Component One's director of engineering, demurred, pointing to projections that the Visual Studio developer user base may grow from 2 million to 10 million in the near future.

"There is a short learning curve, ease of use, and the cost of assimilating the platform is low. Some of those technologies will live, and others will die," he said, adding the component developers have to do projections into the future and evaluate whether new technologies such as MVC will last.

TOOLING IT ALL TOGETHER

Visual Studio 2008 provides the tooling for all of the aforementioned technologies. It also promises to make a marked impact on how component vendors work, and provides a common development environment for their customers.

National Instruments' product marketing engineer Wendy Logan said that VS 2008 improves the load speeds of large projects, and that improvements in the IDE, and the WinForms designer in particular, have made it more user-friendly.

Changes in Visual Studio's design view required Telerik to re-architecture its controls, said Anglin, who added that integrated support for LINQ data sources and new CSS support present new opportunities for vendors going forward.

Software FX's Garcia pointed to Microsoft Office Share-Point Designer 2007 as a sign of how Visual Studio is helping component vendors innovate. SharePoint Designer is a shell for VS 2008 that provides an extensible framework to build components for SharePoint

portals. "It is an IDE developers can use in a familiar way to add third-party components into SharePoint," said Garcia.

The story is not limited to Visual Studio; Microsoft's Expression line of products is forming its own ecosystem of tooling around Silverlight, separate from Visual Studio. Dev-Express' Bucknall weighed in that that Microsoft was "serious" about Expression Blend being used as a design tool for user interfaces and targeting Visual Studio for developers. "It takes a long while for vendors such as ourselves to understand that we have to look at the market and try to work out what people want."

Component vendors are the indefatigable riders of Microsoft's technology waves,

writing and re-writing controls until they understand the conventions well enough to be ready to support whatever customers ask for. Initiatives such as ASP.NET AJAX, MVC, Silverlight and WPF have provided ample opportunity for vendors to build innovative solutions on top of them. \blacksquare

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FROM THE EDITORS

January's After-Holiday Sales

The software development world on Jan. 16 heard about two major acquisitions. Neither should be a surprise.

The bigger deal is that Oracle, thwarted in its October 2007 attempt to purchase BEA Systems, was able to come to terms with the middle-ware maker. The US\$8.5 billion deal was a much sweeter offer than the original \$6.7 billion offer. Given that BEA was clearly ready to be acquired, and that no other suitors had come forward, an Oracle/BEA deal was only a matter of time... and of money.

What will this acquisition mean? For most enterprise customers, it probably won't make much difference at all. While some BEA products might be subordinated to their Oracle counterparts, Oracle should be a good shepherd of BEA's technology and customers. If anything, Oracle's deep pockets might drive some of BEA's initiatives faster.

Smaller by far, but potentially more significant, is Sun's purchase of MySQL for about US\$1 billion. The Swedish software maker's open-source database is one of the four pillars of the LAMP stack—Linux, Apache, MySQL and PHP/Perl—and is relied upon by many enterprise and commercial developers.

The question is, how well will MySQL fare in Sun's hands? While Sun is focused on open source software, it likes to go its own way. Certainly, MySQL will see investment, as well as tighter integration with Java, Solaris and NetBeans. Whether that will be at the expense of other databases, we'll have to wait and see. While we can expect MySQL to go in new directions, they're bound to be interesting ones.

Microsoft 2.0

Anytime there is an exodus of top executives from a company, the prognosticators come out of the woodwork. SD Times cannot predict the future, but can provide context about what is happening today as Microsoft begins to mature as a corporate entity.

Last year, 2007, began with Microsoft veteran Jim Allchin retiring after 17 years with the company. Now, a year later, Jeff Raikes, president of the Microsoft Business Division, followed suit. Other 'Soft-ies of long standing, including Charles Fitzgerald and Robert Short, also announced their departures.

After many successful years, and growing rich in the process, the old guard is leaving. Nothing will punctuate Microsoft's generational shift more than Bill Gates' last day on the job this June.

Microsoft's executive churn is expected. The founders cannot hang on forever. However, the timing is probably not the best.

Even though 100 million copies of Windows Vista have been sold at retail (if you trust Microsoft's count) it has been almost universally panned among critics. The company was habitually late in delivering its next-generation enterprise and developer's platforms, and consequently, major technology initiatives including ASP.NET AJAX and WPF were introduced without suitable tooling.

Coupled with lackluster performance, those failures beget speculation that Microsoft is in the midst of a shakeup. But those are not grounds to judge what is happening: Companies plan for generational change, and likewise, Baby Boomers, like Gates, are beginning to enter their twilight years.

With newcomers like Google and Salesforce nipping at its heels, Stephen Elop, who replaces Raikes, understands the Web better than he would understand a microcomputer. It may not be such a bad idea for Microsoft to bring in some fresh faces.

Technologies like LINQ and Silverlight will enable a new generation of Microsoft-centric applications far different from the BASIS applications that Bill Gates cut his teeth on. The way Microsoft interacts with developers and competing technologies has changed and grown more transparent.

The story is not all bad, but the story is changing and a new chapter is about to be written. ■

Drinking the Dirty Water

Windows & .NET Watch

have traveled around the world and drunk the dirty water of many wells," said Jitendra, "and drinking dirty water is necessary to gain a certain perspective on software development." After reassuring me about our dinner plans, he continued to wax philosophical. The last of the color was draining from the Friday evening sky and, with

management two hours gone in this direction and that, the issue was why software projects, even ones going relatively well, so often involve great drama and emotion.

When a system is conceived, continued Jitendra, it embodies the insight and experience of its conceiver, and the great achievement seems to be this conception. But even if we

were to grant the conceiver absolute dictatorial power over the system, we would often see tears from his or her eyes.

As a system embodied in computer hardware, it has necessary characteristics. But the conceived system, that which is imagined and valued above all others, is a system not with computer characteristics, but with the characteristics of its originator. An extension of its creator, at least, if not an outright duplication! Jitendra laughed at the folly.

We drove in silence for a bit as I digested his point. Of course, most of the pain in development stems from more mundane problems: not listening to users, gaps in the dance between data and behavior, and constraints of the iron triangle of time, resources and function. But this didn't seem to apply in this case—from my perspective (and, I believe, his), things had gone fine. Jitendra's tough questions as client project manager had flushed out some isolated modifications and refinements that we needed to make, but as an architect of the system being reviewed, there hadn't been a moment when I felt there was egg on our face. Yet not everyone in the room had been as sanguine.

At midweek, there had been a crisis. Voices were raised, tempers flared, teams had withdrawn to separate conference rooms to discuss what was to be done about all this. But while I believe working code trumps documentation, this week had been about documentation, not code,

so I intoned my mantra and took notes. Jitendra had voiced doubts, rejected any hand-waving and unflappably pushed the issues. Perhaps the others had been doing the same to some extent, but there was no doubt that strong emotions had been unleashed.

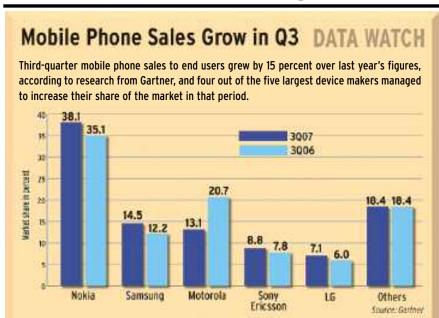
Jitendra's insight is deep. When we imagine or dream something, it can one

moment be one thing, and the next another. When we try to bring it into the world, it has to take a concrete form and, compared to the dream, may seem to fall short. And to the extent that we associate the value of the system with our own expertise and value, the inevitable difference between computer and human can make even the best system seem a bitter disappointment.

"It's like having children," I said. "The discovery of their independent identity is bittersweet." Those of us who build systems for a living have gotten used to the experience and, to the extent we notice at all, see the system as gelling and settling into its natural form. To executives and users, for whom the experience is unique or rare, the bitter can dominate and lead to the passions we'd seen midweek.

It's another example that it's people, not computers, that make software development so interesting. ■

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.



Will C and C++ Survive?

Several years ago, many r 1

declaring that C and C++ were dead, and Java would soon take over the world. My company, Parasoft, had been building development tools for C, C++ and Java for some time, so this really caught our attention. Despite what these people said, we couldn't believe that C and C++ had no future—the three lan-

guages all had different strengths and were useful in different contexts. So, we didn't follow the herd and abandon the so-called "dying" languages. Rather, we took the automated Java unit testing technology that we pioneered in 1997, and extended it to support C and C++.

Looking back, I think we made the right decision. Granted, it appears that C++ is nearly extinct in IT organizations producing enterprise or

stand-alone applications. Nevertheless, it seems that the C/C++ doomsayers vastly underestimated the languages' role in meeting the increasing demands for embedded software. It turns out there is still a huge demand for C and C++ development in the embedded software space.

C is used in most of the low-end embedded systems where there is no support for real operating systems. This includes most consumer devices as well as automotive systems.

C++ is currently the language of choice for increasingly complicated devices, such as those used in the aerospace, military and medical industries. These devices rely on C++ to handle complex, mission-critical applications.

When people build embedded systems, they are actually doing function programming, not object-oriented programming. This might be considered a step backward from a computer science perspective, but it really reflects that embedded systems development focuses not on theory, but rather on building software as efficiently as possible.

WHAT DOES THE FUTURE HOLD?

I truly believe that C has a brighter future than C++. I predict that as time goes on, C++ will become phased out in many cases. Eventually, most C++ features that do not require runtime support will most likely become available in C. Anything that does require runtime support will probably be used less and less in embedded systems. In my humble opinion, C will bolster its dominance over software that drives electronic devices and hardware.

Some might argue that C's difficulties make it ill-suited for such dominance, thanks to its pointers and other complexities. I respectfully disagree. In fact, most problems related to memory management in C are not a major issue in

everal years ago, many people were embedded development. Why? Many of the smaller systems don't use dynamic memory, so they aren't troubled by memory leaks, problems with malloc and free, and similar issues. That's a tremendous advantage. That's also one of the reasons why Java didn't take off for embedded systems development. The problem with using Java for embed-

> ded systems is not just that Java is too heavy (because it needs to have an implemented virtual machine), butimportantly—the garbage collection. You never know when the garbage collection is going to run. This is a major problem for embedded systems where timing is important.

Moreover, I think that C will dominate RTOS development.

For these reasons, I believe there will be a significant demand for people who can program in C and less demand for C++ programmers.

What about Java? Eventually, the more complex, high-end systems that currently rely on C++ will move to Java. If systems have an operating system and aren't affected by timing problems, moving them to Java would help ease of development, ease of maintenance, and also application portability.

CHALLENGES FOR DEVELOPERS

Both C and C++ development have been simplified by the industry's

embrace of static analysis. Most people now understand that using patternmatching static analysis to enforce coding practices is a valuable way to prevent errors. There is also growing interest in flow-based static analysis. Its ability to find complex runtime errors is attracting a lot of attention, but people need to understand that pattern-matching static analysis is actually more valuable because it can prevent entire classes of errors.

Nevertheless, C and C++ development is more complicated when it occurs in the context of embedded systems. Since the software is being developed on a different platform than the one it will eventually run on, you cannot readily run a test program in the actual deployment environment, as is possible with desktop programs. There are several explanations for this disconnect. The target hardware might not be ready until late in the development cycle, the hardware may cost too much to give software developers access to it, the full environment may be difficult to replicate in a development shop, and so forth.

This challenge is complicated by the industry's push for shorter development cycles, especially in the consumer electronics industry. To get the product to market faster, the developers need to ensure that once the hardware is ready and available for testing, they can deploy the software on it and get it working as soon as possible.

Dr. Adam Kolawa is the co-founder and CEO of Parasoft, which sells software testing tools.

LETTERS TO THE EDITOR

Defending Interpreter

I have read Andrew Binstock's column "Patterns as an Anti-Pattern?" (Jan. 15, page 39) and while I found the general idea (that patterns are not carved in stone) very insightful, I beg to disagree about your assessment of the Interpreter pattern. You say that "The trouble is that as the pattern lies, the interpreter model that is proposed could only be used for a trivial language," and I agree, because most times I had to implement an interpreter, triviality did just fine.

Take my most recent project, an application that must take a binary filecreated as a dump of a given C data structure—load it and transpose the data to an instance of a newer version of that C structure. It does so by automatically writing, compiling and running a second application, which has translation logic hard-coded into it.

To write that second application, my program first parses a pair of header files for the "old" and "new" versions of the C structure, generating a vector of objects containing information it later uses to write the transposition code. And while C can very well be a tricky language to parse, for the subset my application needed to understand—namely, integer constants, struct's and their fields—the basic Interpreter pattern did just fine.

So, here I have this clever little programmer robot, cranking out customized "fire-and-forget" batch programs. It does not dare to try and compile the programs it writes, delegating this to a proper C++ compiler instead. But when it comes to reading and, well, interpreting the C header files that detail its task, it's a (most elegant, if I can say so myself) implementation of the Interpreter pattern it relies upon.

Is Interpreter only adequate for trivial languages—or in this case, trivial language subsets? Most certainly. Does it mean it's useless? Not at all. Time and again I have stumbled on such small languages and the need to make sense of them, and Interpreter did turn out to be "the simplest thing that would work."

Helio Perroni Filho



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Asymmetrical Computing Hardware Returns?

or several years, my columnist colleague Larry O'Brien and I have discussed the challenges posed by a world in which parallel processing becomes the standard form of programming. Our interest arises from the implementations of multithread support in today's processors (first Hyper-Threading Technology, then multiple cores) and the belief that customer expectations for the new chips will force developers to use all processor resources. Thereby, they will be forced to adopt multithreaded design in desktop software, and later on handheld devices.

It is clear the industry is uneasy with this transition. Except for specialty programming languages such as Erlang, most mainstream languages today rely on complex mechanisms for managing threaded operations and mutual exclusion. These solutions are workable—they have, after all, enabled all the current server-side software—but they are clumsy enough that most client-side developers simply close their eyes and keep on coding using the single-threaded model they know. Industry efforts such as Open-MP have offered partial solutions that have yet to be widely adopted.

The new thinking is that compilers or execution frameworks may have to be given the burden of managing threads. That is, they will have to identify parallelizable code and run it themselves. This is a very hard problem for them to solve, but not impossible.

Consider that for years processors have been examining instruction flows, executing instructions out of order and speculatively executing code branches, without ever disrupting the proper program flow.

One possibility is that similar analysis at a higher level could occur within the framework, and these operations could be farmed to different processor cores for execution. One challenge in this approach is whether the pieces of code that are farmed out are big enough. The smaller the piece sent to a core, the smaller the lift for parallelization (due to the

inherent overhead as well as the bounds on this approach expressed in Amdahl's Law, which articulates the diminishing returns of parallelizing small chunks).

One way to break out larger chunks is to re-examine a concept that was popular a generation ago: asymmetrical processors. Or in this case, asymmetrical use of processor cores. In an interesting essay in Microprocessor Report—the justly revered newsletter on processor

technology—analyst Tom Halfhill suggests that the profusion of processor cores might augur an era in which designated cores are assigned specific tasks. These could include, as Halfhill suggests, compressing and decompressing, audio and video processing, cryptography, and scanning for viruses, among other tasks.

It's certainly clear that an execution

framework can break out functions like codec processing and hand it off to a designated core while performing other work. This is similar to handing video processing to the graphics card, thereby removing this burden from the central CPU. This approach would be a way to move large chunks into parallel processing pipelines.

A classic knock against asymmetrical processors has been that it makes no sense to have one processor doing little or nothing when others are overloaded. This argument was valid in a different era, when processors were expensive and there were few of them. But as we move to eight and 16 cores, the objection holds less weight. (Additional cores can be added to the task if needed—although this parallelization might be more diffi-

cult.) The benefits of parallelizing via specialization trump the insistence on purely general-purpose processing.

In fact, asymmetry has long been used in computing to boost performance in almost all domains. Let's look at processors. They contain separate level 1 caches for instructions and data. Even though one cache might be full, while the other is not, the separation of contents helps the processor move faster. Likewise, within the core itself, specific registers are dedicated to designated purposes. At a higher level, servers have often relied on specialized hardware to support general processors; for example, graphics cards, as mentioned earlier, and TCP/IP Offload Engines, which use a separate processor to handle incoming IP packets.

Asymmetrical processing is not without risk. Software performance might vary tremendously due to hardware configuration choices. Operating systems will need to be tuned for specific platform features. Finally, software developers will need to provide runtime identification routines and dispatch software differently based on which cores are dedicated to what. If the runtime framework can perform this task, we might indeed find effective parallelizing possible without having to retrain client-side programmers. •

Andrew Binstock is the principal analyst at Pacific Data Works. Read his blog at binstock.blogspot.com.



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Why Some Developers Are Hurting SOA

Developers out there are not thinking about the architecture these days, generally speaking. They are so concerned about the next cool tool or language coming down the pike that architecture has a tendency to take a back seat.

There are a few exceptions. I've found in my tenure as CTO(s) that there are always those developers you find waiting for you in your office with great ideas around architecture. Those are meetings I always took, since developers typically have more insight into the systems and many of the suggestions I got from them over the years proved valuable.

However, another hard truth is that most developers don't think about architecture, but focus more on the latest tools, languages and platforms. They are more concerned about how things are built versus why they are built, or, more importantly, how software systems work and play well with other systems. That thought pattern needs to come to a quick end.

I'm finding that many developers who should actually understand and promote SOA are more of an obstacle, typically not thinking holistically about the purposes and placement of their software systems within the enterprise architecture. This is most troubling when you consider that the disciplines behind SOA, the exposure

and development of services for reuse, benefit the developers most by providing cost-effective and quick mechanisms for building software systems going forward.

There are a few things that developers need to look out for, including the issues around:

- Not invented here.
- Not my job.
- Not fun.

Not invented here refers to the fact that many developers don't like using OPC (other people's code), and thus don't like to leverage services. We saw this in the object-oriented days of the past, when reuse failed due to lack of interest, more so than lack of need.

While developers should indeed love creating their own software, working in isolation never benefits the more strategic good. Thus, you need to dump that attitude that others can't build software as well as you. Thus, you need to learn how to use OPC and share your own. That's the only way we're going to get out of this architecture quagmire and move towards SOA.

Not my job refers to the developers who look at architecture as somebody else's problem. The reality is that archi-

tecture in the world of SOA is not just the responsibility of the architect, but needs to be managed systemically throughout the enterprise. Thus, everyone needs to own it, understand the value and assist in its success. Architects need to understand this as well. Many of them close their doors to developers, but if SOA, or any

architectural improvement effort, is to be successful, there cannot be a chasm between enterprise architects and developers. Indeed, they all need to march to the same drummer, else don't bother.

Not fun refers to the fact that developers love to code, and many aspects of architecture are more about thinking than coding, thus the effort

can be a bit dry and not fun. While I wish I could tell you that deep analysis of a semantic domain is a real party, or that service decomposition is like snowboarding inside, the reality is that architecture needs to be considered at all levels of systems development, and that working through an architectural problem, if you do it right, is indeed fun (okay, in my sick world it is).

The fact is that architecture is like any other logical problem, such as

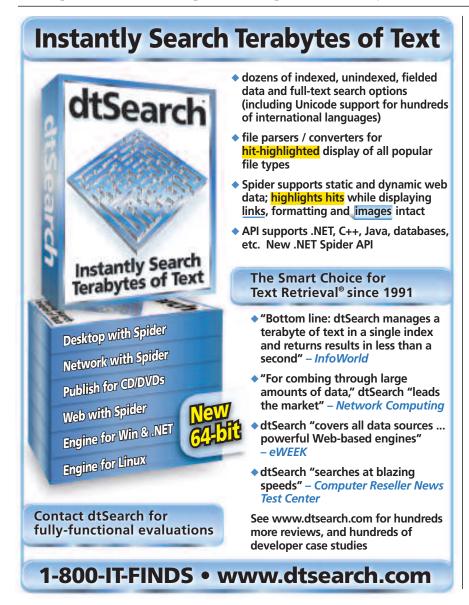
development, and those who love to solve puzzles and play role-playing games are typically people who do well with architecture. It can be fun and fulfilling, if you only give it a chance. Most developers today roll their eyes and continue to code. That can't occur longer-term.

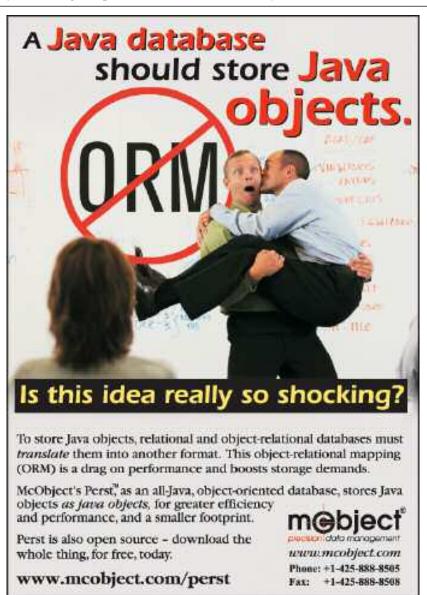
What's funny about all this is that those who are the lead thinkers in the SOA space, and perhaps I'm included in that group, were all full-time developers at some point and understand the need to engage existing developers in the SOA problem. However, they typically don't. Many consider SOA as an elite discipline, one that will produce direction to developers and not require involvement.

The truth is much different. If developers are not onboard, SOA won't happen, plain and simple. Thus, we can either draft developers into the process of creating a SOA, which is needed, since many are not currently invited to the meetings, or have the developers participate on their own, providing their input and value into the process, and learning how SOA will change their roles and their jobs going forward. It will be a positive change, and that developers need to march alongside of the architects. Are you ready?

David S. Linthicum is a managing partner at ZapThink. Reach him at david@zapthink.com.







Make Everyone a Winner

n October, Oracle offered US\$17 per share for BEA Systems. BEA wanted \$21 a share. Last month, they settled at around \$19-or \$8.5 billion dollarsand an acquisition was begun.

So, who got the better of whom?

On the face of it, it's easy to think that BEA got the better of the deal. Holding out for a higher price per

share, and getting it, would Industry Watch be easy to portray as a win. With many pundits agreeing that the U.S. economy could be headed toward a recession—given the mounting mortgage and housing crises, the strain and drain of continued military operations in Iraq and Afghanistan, oil prices at \$100 a barrel—BEA took a risk by waiting for a

better offer. Oracle might simply have waited for a downturn, and then, when the pressure on BEA was greater and its stock price lower, made an offer even lower than the \$17 per share first

Some, though, might give the nod to Oracle, which picked up a large and loyal customer base while eliminating a competitor in the middleware market. If there is a recession, Oracle not only has more customers to service and support, but it also will benefit from the subscriptions it has from its CRM and ERP suites. So, Oracle will be better placed to ride out any downturn, and improve its competitive position in what has become as \$12 billion market dominated by IBM. With BEA, Oracle squarely moves into second place.

But perhaps the bigger question should be, did Oracle get the best of

BEA's customers?

Enderle Group principal analyst Rob Enderle thinks Oracle will be beneficent. He said Oracle usually is straight with customers about their intentions after an acquisition—and after all, they've made more than 30 in the past few years.

There is quite a bit of overlap in the product lines,

with Oracle's Fusion competing directly with BEA's AquaLogic middleware for service-oriented architectures. Peter Zotto, CEO of SOA competitor IONA Technologies, said, "If history proves to repeat itself, the experience with Oracle and its acquisitions is that it tends to take the revenue streams from companies it acquires and raise prices. Oracle uses the retirement of products to justify price hikes. In the short term for BEA customers, they'll see their costs rise.'

Oracle has been having trouble

delivering on its Fusion middleware vision, which ZapThink senior analyst also noted that BEA's AquaLogic has been only slightly more successful, garreason is that they're based on application servers, which were created lips. And then there's the threat from open source.

when a market segment consolidates as the technology matures, at the end of that phase, innovation from new vendors takes place," Zotto said. "I see this as the final phase of consolidation of the pre-Web services, pre-Internet integration vendors. A new cycle begins with anti-stack players taking a lightweight approach.'

So maybe customers looking for middleware solutions haven't been had by this acquisition. Perhaps this will give them a chance to examine new solutions to their integration problems that are less expensive and more closely aligned to a Web 2.0 world of services and loose coupling.

Then it's a win for everyone. ■

David Rubinstein is editor-in-chief of

Jason Bloomberg once called a "Frankenstein" approach to SOA, assembling various parts from different places. The question, he posed, is will it all work when it's done? But Zotto nering about 10 percent of the market versus Oracle's 8.5 percent. Part of the before Web services were on anyone's

"The reality is, from my perspective,

Sun Bids for Open Source Pillar

Billion-dollar deal is all about global service and support

BY ALEX HANDY

Open-source companies are the new dot-coms. And in the pantheon of opensource software firms, the possibility of an IPO of shares in Sweden-based MySQL AB has been the subject of much speculation in the past year. But those rumors were put to rest the morning of Jan. 16, when Sun Microsystems announced it would acquire MySQL for a total of US\$1 billion.

Simon Phipps, chief open source officer at Sun, said that this acquisition was mostly about global services. "MySQL had reached the growth point where it was asking itself how it was going to grow for providing software in the enterprise. The next step for them was to grow a global sales and support operation. There was no way they could do that, even with an IPO, that would be any where near the power they'd get by going in with Sun,"

Jean Bozman, research vice president of enterprise servers at IDC Research, said that this is Sun's third-

largest acquisition ever. She said that MySQL brings Sun a large portion of the Web 2.0 market, as many nextgeneration Web sites—including Facebook and some Google applications-are backed by MySQL data-

For developers, the acquisition brings Sun's existing software development tools closer to a specific database. While Sun will continue to support and work closely with Oracle and PostgreSQL, said Phipps, the company will continue to improve existing support for the MySQL platform in NetBeans and other tools.

"It's interesting having conversations with people this morning," said Phipps, speaking on the day of the acquisition. "Everyone says this is a negative to some other company; a slap in the face to PostgreSQL or Oracle. The truth is that this is an additive thing. This means Sun is going to combine forces with MySQL to help grow MySQL's business. MySQL's business really is complementary to Oracle's business. In many companies you find MySQL and Oracle together."

NO CULTURE SHOCK

Martin Mickos, CEO of MySQL, said that the culture at MySQL AB is very similar to that of Sun.

"It was great when we spoke to [Sun] and said '70 percent of our people work from home.' And the people at Sun said 'Yeah? So what? Many of our people do too.' It's funny to see how well those things were aligned,"

Mickos said that he expects to become a senior vice president at Sun when the acquisition is complete. He also said that his company gets a larger boost from this acquisition than it could have with an IPO.

"I would say there's a number of accelerators for our business. One is the business we conduct will grow more rapidly now. But we're providing support services and consulting on a much broader scale," said Mickos.

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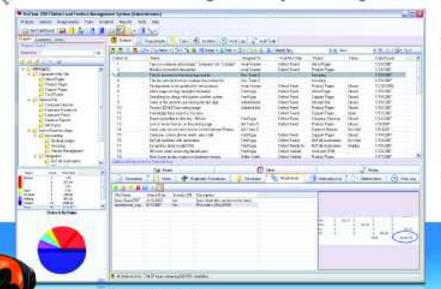
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